WRIGHT MACHINE

W-150 HD-B

AUTOMATIC TOP & FACE GRINDER

OPERATOR'S MANUAL

MADE IN THE U.S.A.

W-150 HD-B TOP & FACE SHARPENER

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W-150 HD-B TOP & FACE SHARPENER

LIMITED WARRANTY

This machine is warranted against defects in workmanship and materials under normal use and proper maintenance, for one year after date of purchase from WRIGHT MACHINE TOOL CO. Any part which is determined to be defective in material or workmanship and returned to WRIGHT MACHINE TOOL CO., shipping costs prepaid will be repaired or replaced, at WRIGHT MACHINE TOOL CO. option.

WRIGHT MACHINE TOOL CO., INC.
365 Palmer Avenue
Cottage Grove, Oregon 97424

Phone (541) 942-3712
Fax (541) 942-0730

WRIGHT MACHINE

W-150 HD-B TOP & FACE SHARPENER

GENERAL SAFETY RULES

Failure to follow the Safety Rules and other basic precautions, may result in serious injury.

Always use eye protection: When operating this machine, eye protection should be worn. Grinding particles and the possibility of wheel breakage make eye protection necessary. Also face or dust mask if operation is dusty. Use adequate ventilation.

Use ear protection: If operation is creating excessive noise.

Disconnect power: To machine when NOT in use.

Keep clear: Of grinding wheels and pinch points when machine is running.

Saws are sharp: Wear appropriate personal protective equipment when handling saw blades.

Mounting of wheels: Should only be done by persons with mechanical aptitude and good knowledge of mounting, care, and inspection of grinding wheels. Wheels must be rated for the RPM of the machine.

Dress properly: Do not wear loose clothing or jewelry. Nonskid foot wear is recommended. Wear protective hair covering to contain long hair.

Avoid dangerous environments: Don't use in wet location. Keep work area well lit. Do not use this machine in the presence of flammable liquid or gasses.

Keep children away: Do not let VISITORS contact this machine.

Keep work area clean: Cluttered areas invite accidents.

All electrical covers: Must be in place before applying electrical power to this machine. Electrical service must be locked out prior to removing any electrical covers or machine guards. Access to electrical components must be restricted to trained personnel only to avoid possible electrical shock.

W-150 HD-B TOP & FACE SHARPENER

GENERAL SAFETY RULES (CONTINUED)

Voltage greater: Than specified on name plate can result in serious injury to user.

Never stand on this machine: Serious injury could occur if the machine is tipped or if the grinding wheel is accidentally contacted.

Follow safety precautions: For wheels, coolant and material being ground. These items must also be compatible. This information is available on the Safety Data sheet for each of these products.

Coolant Safety

Proper coolant maintenance will increase grinder life and grinding performance, and possibly reduce any risks associated with health concerns. Lack of proper coolant maintenance can result in increased exposure to grinding grit, bacteria, and other by products of grinding that may lead to increased skin sensitivity in some individuals.

WARNING!

Coolants used in this machine must be designed to be used in wet grinding operations. Do not use automotive coolant. Check with the manufacturer of the coolant to make sure it is designed for use in wet grinding of saws.

Water based coolants are designed to operate at precise mixture ratios. Check with the manufacturer of your coolant to determine the proper mix ratio.

CAUTION

Residual cleaning solutions on the saw will easily be dissolved into the coolant tank and can dramatically affect the chemistry of coolant which can significantly reduce wheel life, coolant efficiency, and corrosion efficiency.

Maintain the coolant filters that were shipped with this machine. If you have any questions on how to maintain the filters, call the factory at 1-541-942-3712

Test your coolant at regular intervals. Contact the manufacturer of your coolant to determine when to test, and which tests to perform.

Warning signs of improperly maintained coolant:

1. Strong (foul) odor coming from the coolant.
2. Color change in the coolant.
3. Noticeable stickiness on the saw.
4. Rust developing on the machine and/or saw steel.
5. Unexplained skin rash.
6. Deterioration of paint and/or plastic parts.

If you detect any of these warning signs consult the coolant manufacturer at once. If you are having trouble contacting the coolant manufacturer, call Wright Machine Tool Co. Inc. at 1-541-942-3712

W-150 HD-B TOP & FACE SHARPENER

SPECIFICATIONS

W-150-HD "B" MODEL Automatic Top or Face Grinder for Circular Saws.

STRAIGHT FACE OR TOP:	1 PASS
ALTERNATE:	2 PASS
TRIPLE CHIP:	3 PASS
STANDARD VOLTAGE:	230 Volt, 3 Phase, 60 HZ
OPTIONAL VOLTAGE:	460 Volt, 3 Phase, 60 HZ
SHIPPING WEIGHT:	1,350 lbs
CRATE SIZE:	L 49" X W 44" X H 62"
AIR REQUIREMENTS:	2 C.F.M at 100 psi to 150 psi
STANDARD SAW SIZE:	4"-30" (34" without tank screen)
OPTIONAL SAW SIZE:	Up to 54"
SPINDLE MOTOR:	1 H.P., 3 Phase, 3450 R.P.M. Motor

W-150 HD-B TOP & FACE SHARPENER

OPTIONS

Large Bore Option:	W-50
Long Index Cam	W-80
Extra Long Index Cam	W-81
3 Pin Spline Saw Center	W-450
Spline Bore Saw Center	W-460
Saw Center Washer	W-1320-(Specify)
Clamp Assembly for Circle Saws 2" to 5" Dia.	W-1322-SA
Expandable Saw Center with magnets	W-495
Large Saw Option 34" to 36"	W-150 HD-A/36
36" to 54"	W-150 HD-A/54
Small Bands Clamp for 3/4" to 1-3/8" Bands	W-2256
Hollow Point Attachment	W-1500
Facing Wheel	D-36 / B-36
Topping Wheel	D-37 / B-37
Dual Grit Topping Wheel	D-37-6-1
	D-37-6-2

COMMON REPLACEMENT PARTS

Finger Arm Pivot Bearing	W-188
Ramp Follower	W-1330
Feed Finger	W-259
Finger Boss	W-287
Finger Spring	W-803
Filter Paper	W-588
Fixed Clamp Jaw	W-1322-3
Movable Clamp Jaw	W-1323-3
Feed Ramp	W-1324
Finger Arm	W-1381
Finger Arm Spring	W-300/W-1453

W-150 HD-B TOP & FACE SHARPENER

PRE SET UP

COOLANT

Coolant capacity is 7 to 10 gallons. A rust inhibiting grinding coolant **MUST** be used or severe rust damage to machine can result. Mix coolant according to manufacturer's instructions.

COOLANT FILTERS: Clean coolant will increase grinding wheel life, improve grind finish and increase removal rates. Change coolant filter as necessary. Part # W-588.

RUST DAMAGE IS NOT COVERED BY THE WARRANTY

MOUNTING GRINDING WHEELS

All grinding wheels must be rated for the RPM of this machine. Wheels exposed to higher than rated RPM are dangerous.

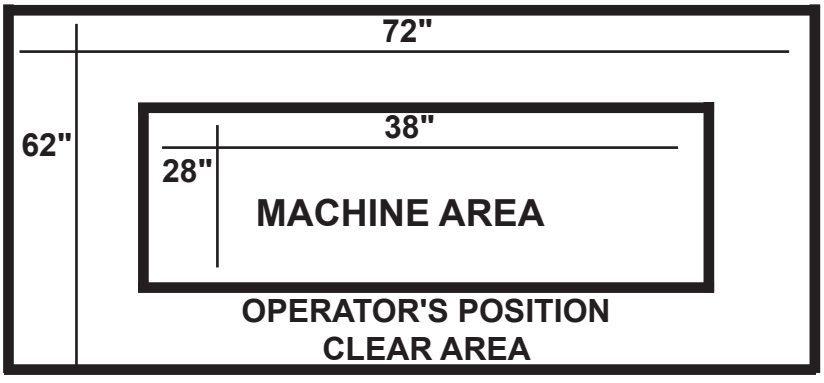
Mounting of the grinding wheel should only be done by persons with mechanical aptitude and good knowledge of mounting, care, and inspection of grinding wheels.

The W-150 HD-B uses two wheels. (D-36 for facing and D-37 for topping). Install the D-36 6" diameter facing wheel first with the diamond facing to the left. Then install the D-37 4-1/2" diameter topping wheel with the diamond facing to the right. With those two wheels back to back it will not be necessary to change when going from top to face.

MACHINE INSTALLATION

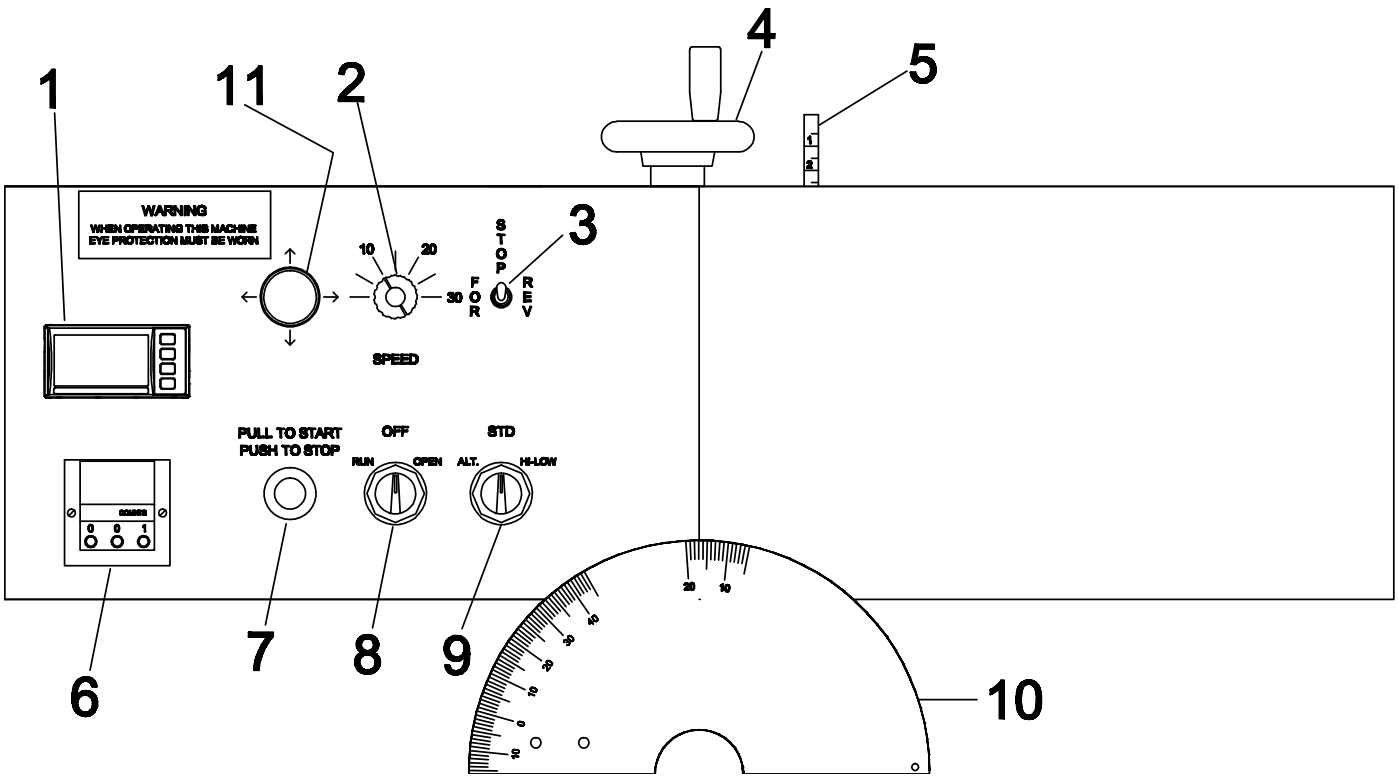
Lifting this machine should only be done with a fork lift under the Coolant Tank. Machine weight is approximately 1,300 pounds.

RECOMMENDED FLOOR SPACE FOR MACHINE AND OPERATOR



W-150 HD-B TOP & FACE SHARPENER

CONTROL PANEL



1. Load Meter
2. Speed Control
3. Cycle Switch
4. Index pitch hand wheel
5. Index pitch scale
6. Counter
7. Start / Stop
8. Saw Clamp Control
9. Grind Mode
10. Hook / Back Angle Scale
11. Head / Saw lift

W-150 HD-B TOP & FACE SHARPENER

SET UP
SQUARE TOP OR SQUARE FACE

1. The Load Sensor #1 monitors the power required to grind. The Load sensor #1 is set by turning the black set knobs. The knob on the right side of the meter controls at what load the forward feed speed is stopped. The knob on the left controls at what load the forward speed starts again. If the machine hits a tooth that is higher than expected. the Load sensor #1 will slow the speed as necessary to reduce the chance of wheel or saw damage.

2. Set Hook or Back angle by moving the Hook Angle / Saw Diameter Adjustment #2 (Joy Switch) to the left or right.

3. Set Speed Control #3 knob at 5 or the number of teeth per minute that you want to grind.

4. Move the Cycle Switch #4 (FOR. / STOP / REV.) to stop.

5. Set the Counter #5 by turning the set knobs to the number of teeth in the saw + one tooth. Example: If there are 30 teeth in the saw, set the counter for 31.

6. Move the Cycle Switch #7 (RUN / OFF / OPEN) to OPEN. This will open the saw clamp jaw.

7. Adjust the index Pitch Adjustment #12 and read Tooth Pitch on Scale #13.

8. Install proper centering device on the saw lift. The W-150 HD standard cup and cone will accommodate saw bores from 5/8 to 2-1/2 inches. A cup and cone for up to 3-1/2 inch saw bore is available. If larger bores are used, a W-50 for saws without keyways or splines or a W-460 / W-495 for spline or keyway bores will be required.

W-150 HD-B TOP & FACE SHARPENER

SET UP
SQUARE TOP OR SQUARE FACE (Continued)

9. Mount saw on centering device. Move Hook Angle / Saw Diameter Adjustment #2 (Joy Switch) up and the saw lift actuator will move up. Stop the saw lift actuator when the saw tip is above the saw clamp jaw.

10. Move the Saw Clamp Control Switch (RUN / OFF / OPEN) to RUN. This will close the clamp Jaw.

11. The W-150 HD B Automatically shuts off with counter, the finger 1/8 inch from full forward. If the machine has been stopped before finishing the cycle, it will be necessary to jog the machine forward to get into the normal stop position.

12. Place the saw tip against the index finger and set the height sensor on top of the tooth. Move the Hook Angle / Saw Diameter Adjustment #2 (Joy Switch) up and the sensor will automatically stop the saw lift actuator. Rotate the sensor out of the way.

13. Pull the START / STOP Switch #6 and the machine will start. Move the Cycle Switch #4 (FOR. / STOP / REV.) to FOR.. The Index will place the tip in position and the grinding head will start moving down. Move the infeed knob as necessary to keep the grinding wheel from hitting the saw.

14. Watch the dial indicator that shows wheel position. When the indicator moves, stop the feed by moving the Cycle Switch #4 (FOR. / STOP / REV.) to STOP. The movement of the indicator demonstrates when the lift off has occurred. The grind depth knob (black handle next to motor) is turned until the wheel is past the carbide tip.

15. Move the Cycle Switch #4 (FOR. / STOP / REV.) to FOR. and the machine will index to the next tooth. It may be necessary to adjust the index guide ramp if the index finger does not follow the saw radius. Only make this adjustment with the machine off.

16. Move the Cycle Switch #4 (FOR. / STOP / REV.) to STOP when the grinding wheel is over the saw tip. Turn the infeed knob until the wheel touches the tip. Turn coolant ON and infeed as needed. Move the Cycle Switch #4 (FOR. / STOP / REV.) back to FOR..

W-150 HD-B TOP & FACE SHARPENER

SET UP
SQUARE TOP OR SQUARE FACE (Continued)

SHUT DOWN

When the machine is **NOT** being used, move Saw Clamp Control #7 (RUN / OFF / OPEN) switch to OFF. This shuts down most of the circuitry.

ALTERNATE TOP SAWS

1. Set Grind Mode switch #8 to Alternate.

2. The plate thickness knob is located between the grinding wheel cover and the spindle motor. This knob must be adjusted on alternates. Turn the knob as far as possible clockwise, this is zero plate thickness. Then back out the knob until the proper thickness is set. Example: .120 plate would be, 1 turn = .100 and then on to .020 for a thickness of .120. To be accurate you must be turning out the plate thickness knob to eliminate backlash error.

3. Included with this machine is a stack of eight alternate angle washers located on the upper right hand corner of the base of the machine. To set the alternate angle, remove the wing nut that holds the cover on the alternate adjustment. It is to the right of the plate thickness adjustment. Remove the degree washer and install the washer for the degree desired. Reinstall the cover with wing nut.

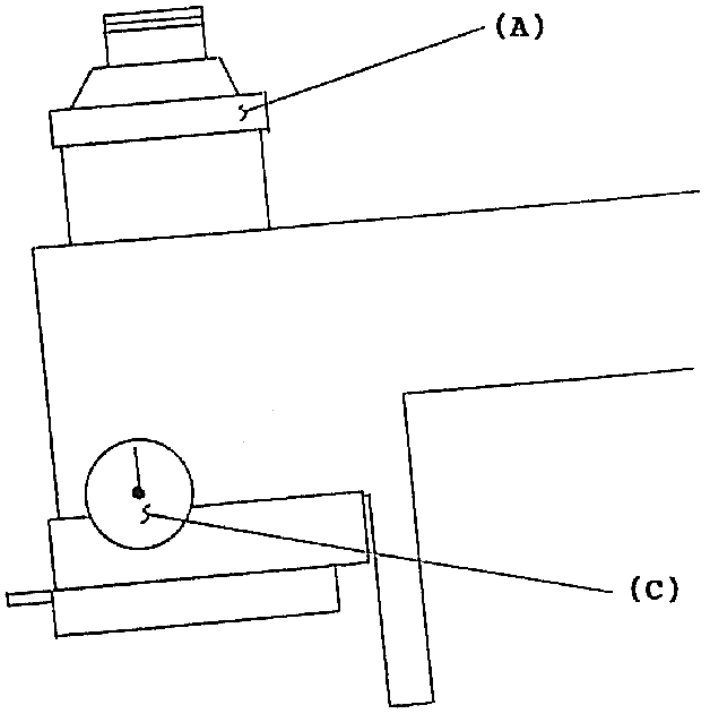
W-150 HD-B TOP & FACE SHARPENER

TRIPLE CHIP SAWS

1. Place Grind Mode Switch #8 to Hi-Low. Install 0° angle washers.

2. Set index pitch for 1 tooth space.

3. Turn Hi-Low ring (A) clockwise for less difference in height between Hi-Low.



4. Watch the wheel indicator (C) for the difference in height. Turning Hi-Low ring only moves the position of the low tooth. Remove all angle washers to achieve 45° alt. angle.

5. To grind chamfer tooth style #8 to alternate. Set index at twice tooth pitch. Set counter #5 (Control Panel) to 1/4 of the total number of teeth in the saw.

6. After the machine stops move the saw 2 teeth forward to the next chamfer tooth, restart the machine and finish the saw.

W-150 HD-B TOP & FACE SHARPENER

PERFORMANCE

1. SAW BLADE DIMENSIONS:

* Minimum saw diameter 4 inches.
* Maximum saw diameter 30 inches (34" with tank screen removed).
* Maximum saw thickness 3/8 inches.
* Maximum tooth pitch straight 4-1/2 inches.
* Alternate top or face angle 0 to 45 degrees.
* Top angle +5 to +25 degrees.
* Face angle -10 to +45 degrees.
* Bore 5/8" to 2.5" standard, 5/8"' to 10" optional.
* Teeth per minute 0 to 29.

2. SPEEDS:

* Average set up time approximately 2 minutes.
* Reload time less than 1 minute.
* Grinding speed (average resharpening) 11 teeth per minute.

The above speeds were accomplished by an experienced operator. The saw used for these average speeds was 24 inches in diameter with 40 teeth, .087 plate thickness, .125 kerf. Larger saws, thicker plate or kerf will require somewhat slower speeds.

W-150 HD-B TOP & FACE SHARPENER

The useful life of this machine can be dramatically extended if the following rules of operation are followed.

1. Clean the machine regularly to avoid carbide buildup.

2. Leave all inspection covers closed and in place. Only open inspection covers during maintenance.

3. A good rust inhibiting coolant must be used in the correct ratio. Too weak a mix will cause rust problems and too thick will damage the paint and load the diamond wheels.

4. If equipped with, and when not in use, leave the enclosure door open. This eliminates humidity build up in the enclosure.

5. Do not clean the machine with high pressure air or water. This can blow grit into the internals of the machine and cause rusting problems which is not covered by warranty.

6. Do not use oilers. Do not use synthetic compressor oil or severe valve damage will occur. Use only water based grinding coolant.

MAINTENANCE

DAILY

1. Check coolant level and filter.
2. Clean control panel, ramp, sawlift, and grinding head.
3. Check and / or drain air filter water trap.

WEEKLY

1. Check coolant tank for and remove carbide buildup.
2. Replace coolant filter.
3. Inspect feed finger for wear.

MONTHLY or 50,000 CYCLES

1. Inspect ramp and clamp jaws for wear.
2. Clean and lube W-287 finger boss.
3. Lube clamp arm pivot and plate thickness slide plate spacer.
4. Spindle housing / bushings - lube.
5. Head feed adjust lead screw - clean / lube (W-1336).
6. Spindle adjust lead screw - lube (W-1368, W-1368-1).
7. If equipped, clean lube height sensor shaft (anti-sieze best!).

EVERY 6 MONTHS or 500,000 CYCLES

1. Inspect spindle drive belt.
2. Clean spindle motor fan / housing.
3. Lube index shaft bearings.
4. Lube rear head feed shaft bearing.
5. Plate thickness pivot and slide plate spacer - lube.
6. Linear slide bearing 1 1-1/2 pump.

W-150 HD-B TOP & FACE SHARPENER

MAINTENANCE / TROUBLE SHOOTING

Care should be taken when control console or rear cover is removed. Do not allow any grinding grit to enter.

Drain water from air filter every day. More often may be required if air is wet or dirty.

TROUBLE SHOOTING

CAUTION: DISCONNECT FROM POWER BEFORE OPENING ANY COVER.

Machine will not start when start button is pulled.

1. No power to machine.
2. Transformer fuse blown, under rear cover next to transformer.

Machine stops as soon as start button is released.

1. Counter is set to zero.
2. Overload tripped on motor starter (inside control console right side bottom).

Machine starts but does not cycle, feed, or index.

1. Check load meter setting.
2. Check the fuse behind control console.
3. Index is bound.
4. Cam drive motor is defective.
5. Speed Control Unit is defective.

Coolant does not flow when switch is on.

1. Check to be certain coolant is in the tank.
2. Valve is closed.
3. Blow air though nozzle to clean obstruction.
4. Coolant pump may be clogged.
5. Coolant pump may be defective.

W-150 HD-B TOP & FACE SHARPENER

TROUBLE SHOOTING (Continued)

Machine will not function, nothing works.

1. Open rear cam cover. On door next to large transformer is an in line fuse holder, twist to open, replace with six amp fuse.

Machine will run only when start button is held out.

1. Motor overload is tripped or the counter is set on zero. Reset overload inside control console right side bottom.

Machine runs but will not go though it's cycle.

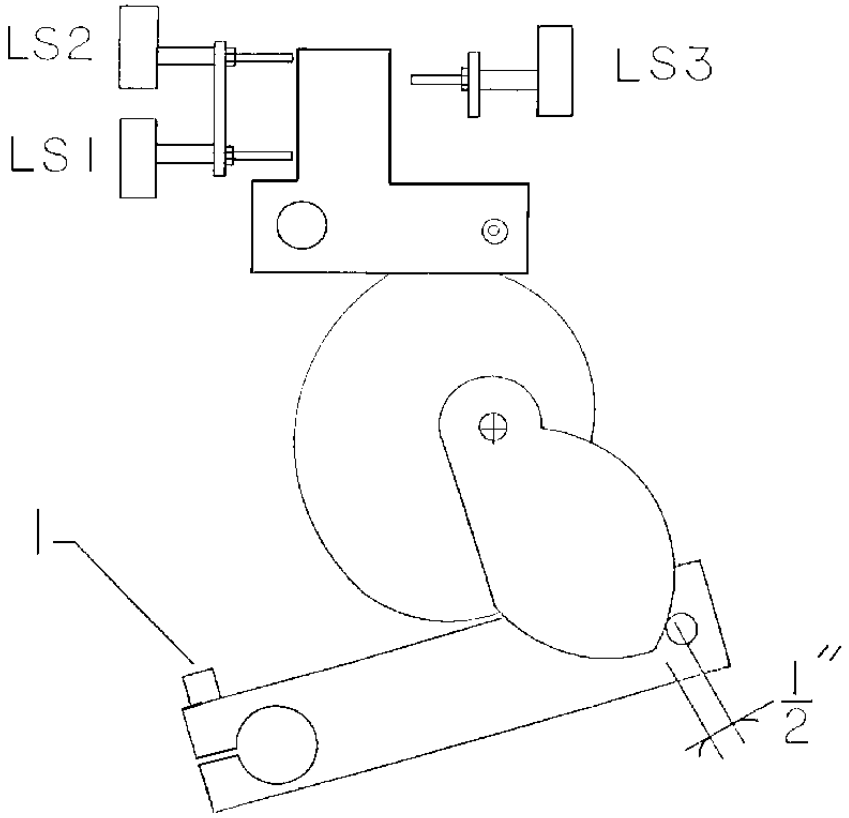
1. The left knob on the load meter may be set too low.
2. Fuses to speed control are blown. Location of fuses are lower left hand of speed control circuit board inside control panel.

If other problems arise please call us for technical advice. (541) 942-3712.

W-150 HD-B TOP & FACE SHARPENER

LIMIT SWITCH ADJUSTMENT

The limit switches actuated by the cams, control the function of the machine. If the machine does not function correctly check the limit switch for proper adjustment.



LS1. Trips at full index forward. When it trips (pushed in) the clamp pressure goes to drag pressure. When untripped the clamp pressure goes back to full pressure.

LS2. Trips when index is 1/4" from full forward. This makes the counter count, and is the normal stop position. It also actuates the lift off toward the tooth.

LS3. Trips 1/16" before grinding head is full in. This resets the latch relays which actuates lift off away from the tooth.

LS4. Trips after the grinding head has retracted 3/8" from full in. This is the point that the alternate angle or Hi-Low shifts.

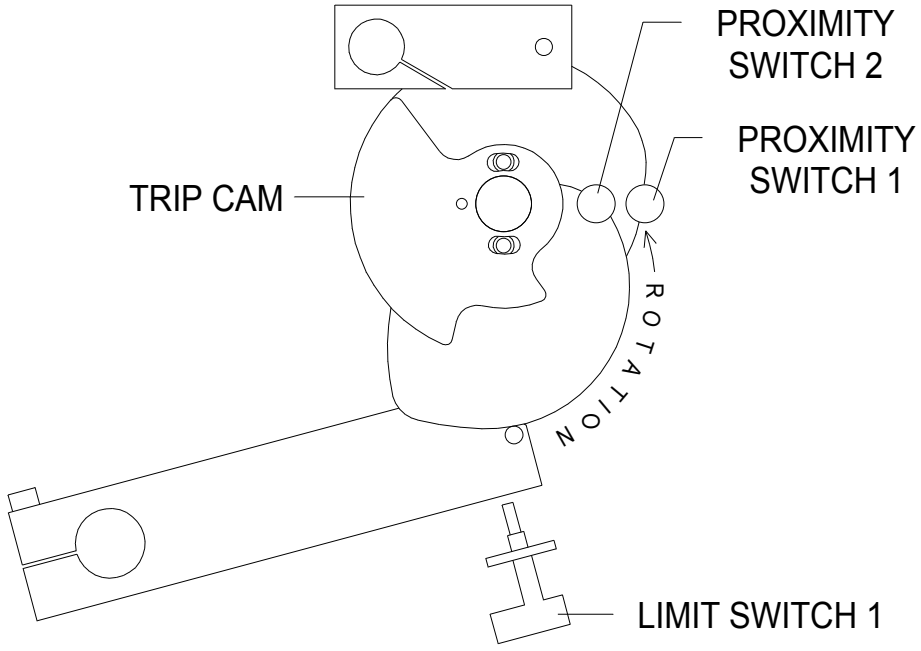
W-150 HD-B TOP & FACE SHARPENER

PROXIMITY SWITCH ADJUSTMENT

The proximity switches tripped by the trip cam, control the function of the machine. If the machine does not function correctly check the proximity switch for proper adjustment. Maximum sensing distance is .125".

Proximity Switch 1 controls clamp and lift-off during grind stroke. When energized proximity switch 1 sets wheel to grind position and clamp to full pressure. When de-energized proximity switch 1 allows lift-off and drag pressure during index.

Proximity Switch 2 activates ratchet relay during alternate and Hi-Low grind modes to alternate head position and grind wheel direction or position wheel for high or low tip grinds.



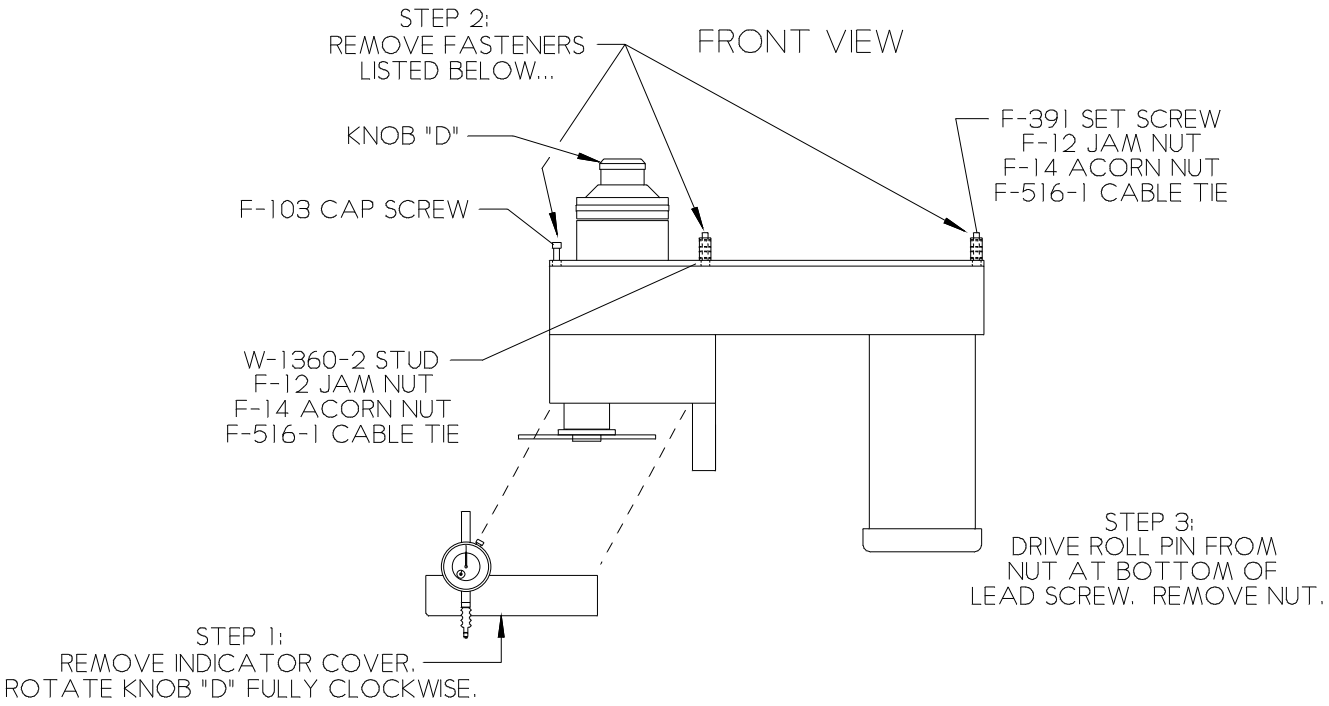
LS-1
Count signal limit switch. Adjust to shut off end of count cycle so cam follower on index cam is 3/8" to 1/2" before high point.

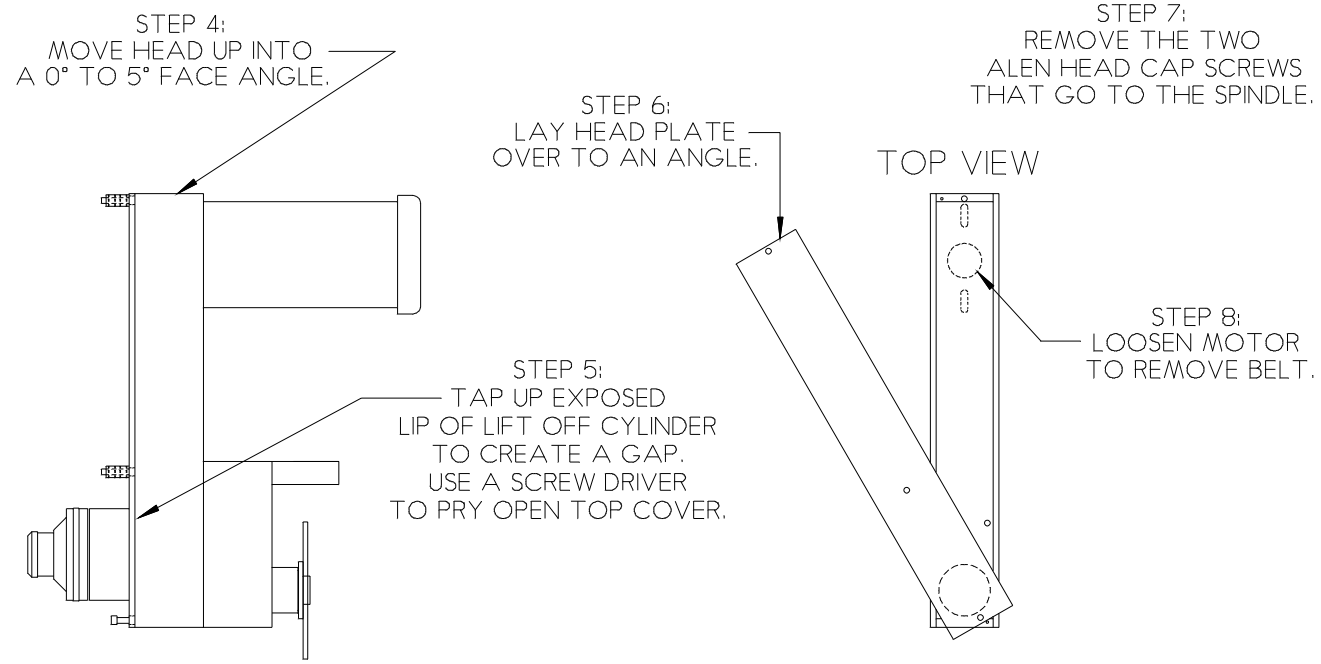
Note: Proximity switch 1 is set .030" to .050" before head full-in being untripped by the trip cam. Proximity switch 1 also sends a signal to CR-3. Proximity switch 2 controls ratchet relay.

W-150 HD-B TOP & FACE SHARPENER

NOTE: DISCONNECT POWER FIRST!

SPINDLE INSTALLATION INSTRUCTIONS

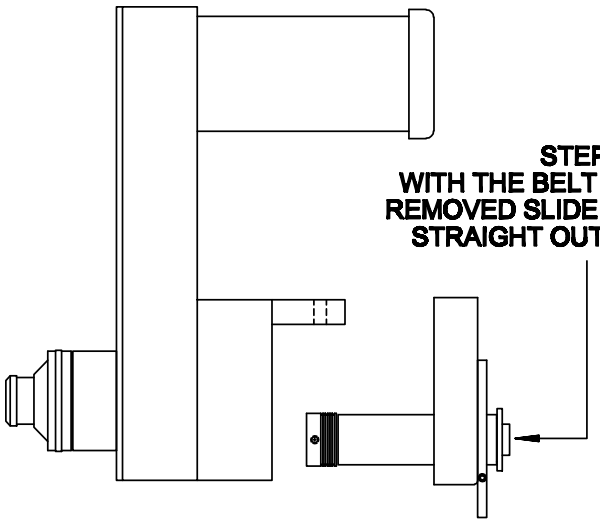




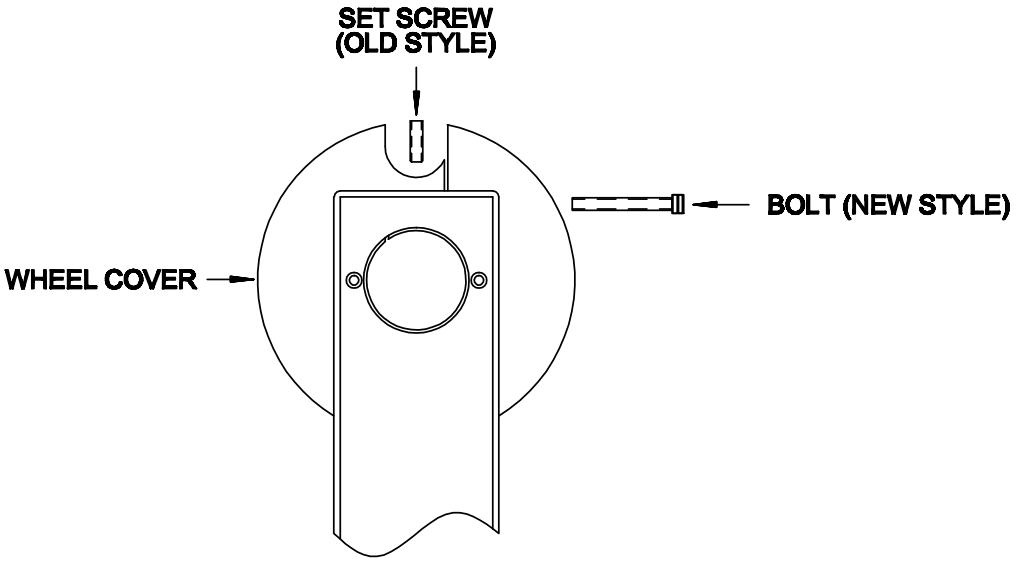
W-150 HD-B TOP & FACE SHARPENER

NOTE: DISCONNECT POWER FIRST!

SPINDLE INSTALLATION INSTRUCTIONS CONTINUED



INSTALL THE NEW SPINDLE IN THE SAME MANNER AS SHOWN IN STEPS 1-9.
BE SURE THE BELT LINES UP IN BELT GROOVES ON THE MOTOR AND SPINDLE PULLEYS.

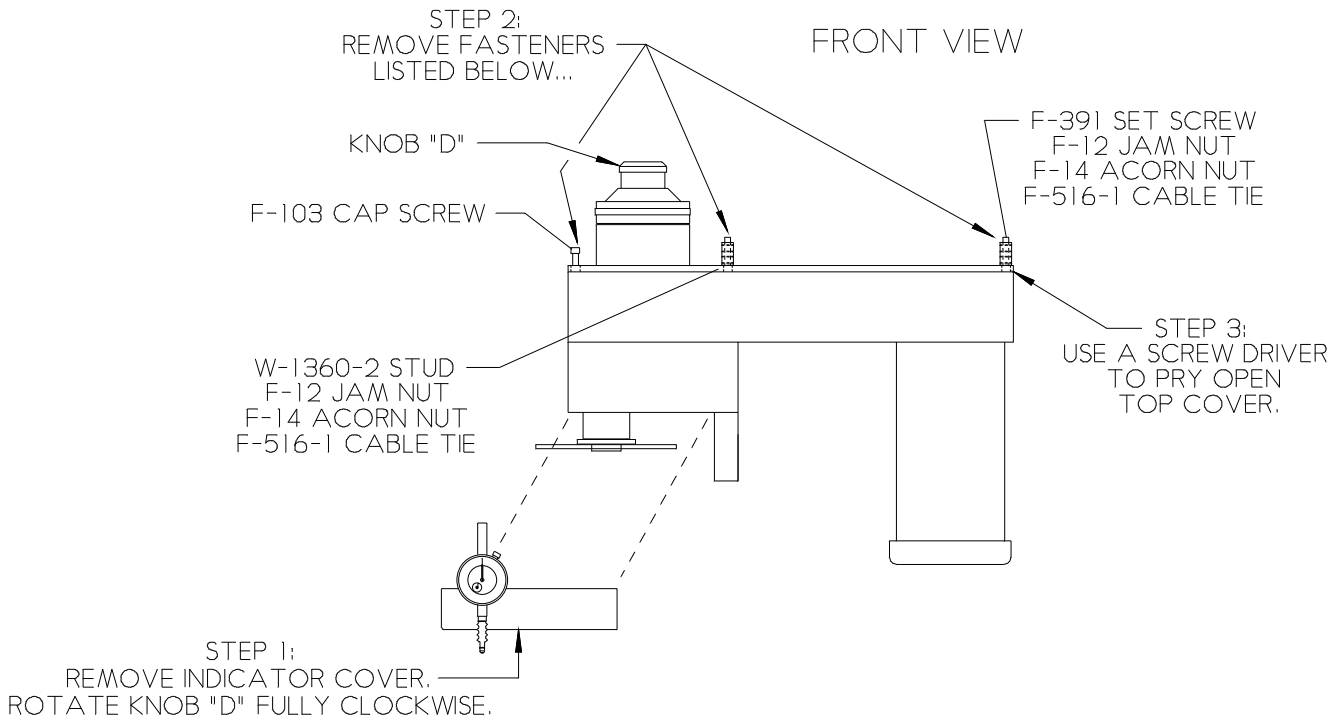


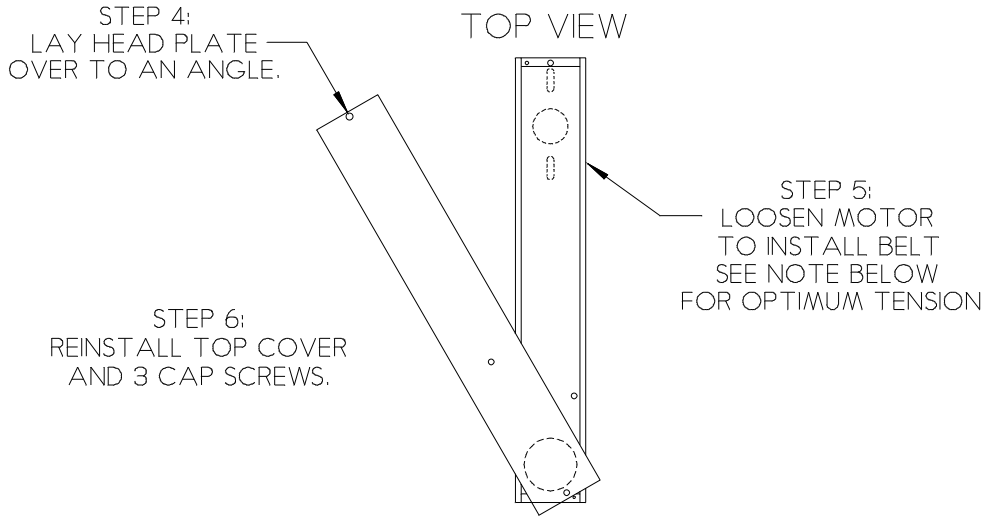
NOTE: ON THE WHEEL COVER SET SCREW - JUST RUNNING IT UP SNUG IS ALL THAT IS NEEDED.
OVERTIGHTENED SET SCREW WILL HARM SPINDLE.
ON LATER MACHINES THE SET SCREW WAS REPLACED BY A SPLIT GUARD AND SOCKET HEAD CAP SCREW.
THE NEW STYLE SHOULD ONLY BE SNUG AND NOT OVERTIGHTENED.

W-150 HD-B TOP & FACE SHARPENER

NOTE: DISCONNECT POWER FIRST!

BELT REPLACEMENT INSTRUCTIONS



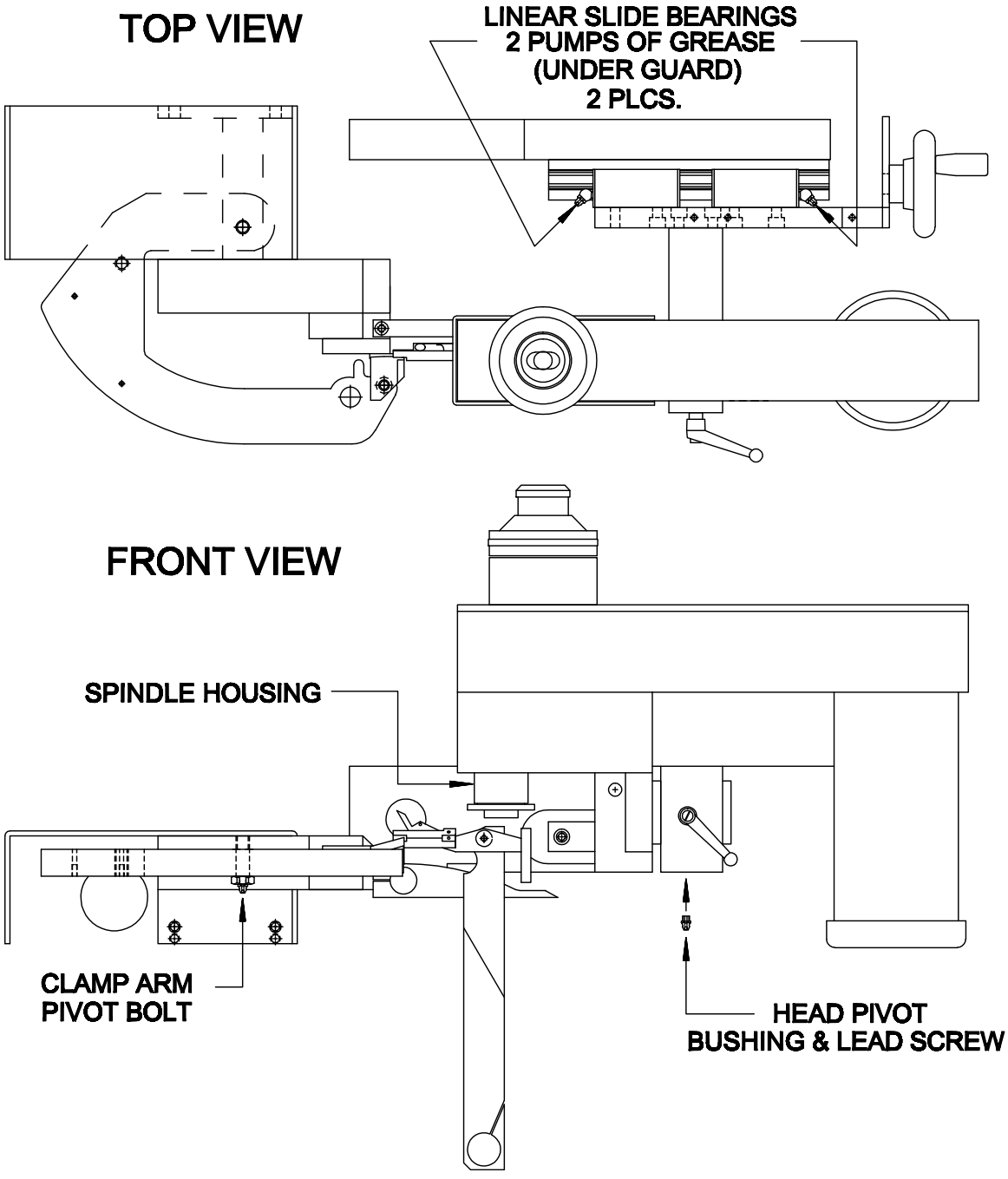


NOTE:
RUN MACHINE IN ALTERNATE. IF THE BELT SQUEALS WHEN REVERSING THEN TIGHTEN BELT.
IF LIFT OFF DOES NOT FUNCTION THEN LOOSEN BELT BY ADJUSTING THE MOTOR.

W-150 HD-B TOP & FACE SHARPENER

LUBRICATION POINTS

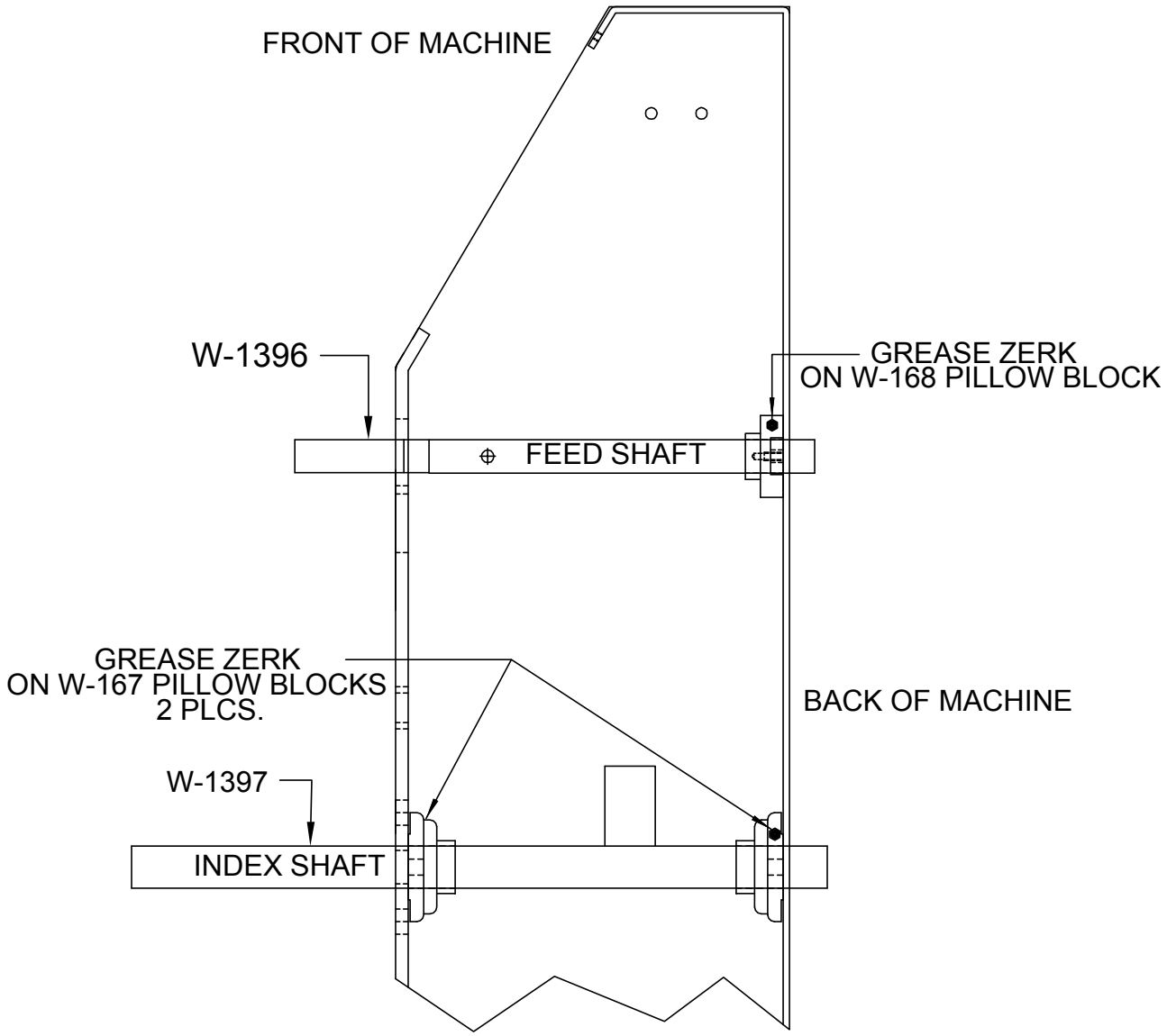
Use grease type UNOBA EP GREASE 2 (Spec. #NLGI 2) or similar grade general pupose grease.



W-150 HD-B TOP & FACE SHARPENER

LUBRICATION POINTS (Inside of Base)

Use grease type UNOBA EP GREASE 2 (Spec. #NLGI 2) or similar grade general pupose grease.



W-150 HD-B TOP & FACE SHARPENER

ADJUSTING THE FRONT INDEX ARM

Begin by checking feed arm against the positive stop set screw using the 1/4" center hole from the 2" hook pivot shaft as the reference point. See figure (i-1). This will ensure correct full forward alignment with the hook pivot. Adjust as needed.

To find the "Starting" reference point of the index cam follower you must use a straight edge held against the two cap screw on the cam set and rotate the camset by hand until the center of the cam follower is aligned with the edge of the straight edge. See figure (i-2). This "Starting" point will compensate for front arm "Pull Back" when retightening. Each machine may require more or less compensation.

To set the feed finger correctly to the clamp jaws you must loosen the front arm pinch bolts, position and hold the finger against positive stop set screw, lay out an .085 steel ruler on the extension beyond the face of the ruler. Tighten the pinch bolts and there should be about 1/8" of "Pull Back". Start the machine and cycle several tips. At the shut off point check tension of the arm by pulling with both hands; it should be barely able to move from the positive stop set screw.

These settings will help ensure consistent indexing critical to satisfactory face grinding.

W-150 HD-B TOP & FACE SHARPENER

ADJUSTING THE FRONT INDEX ARM CONTINUED

ADJUSTMENT OF POSITIVE STOP SHOULD BE CORRECT WHEN THE FEED FINGER IS ALIGNED WITH THE CENTERLINE OF THE MAIN PIVOT SHAFT.

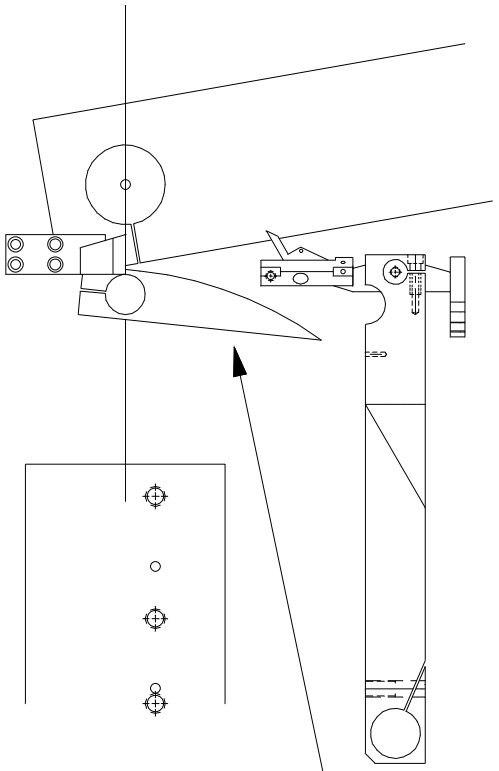
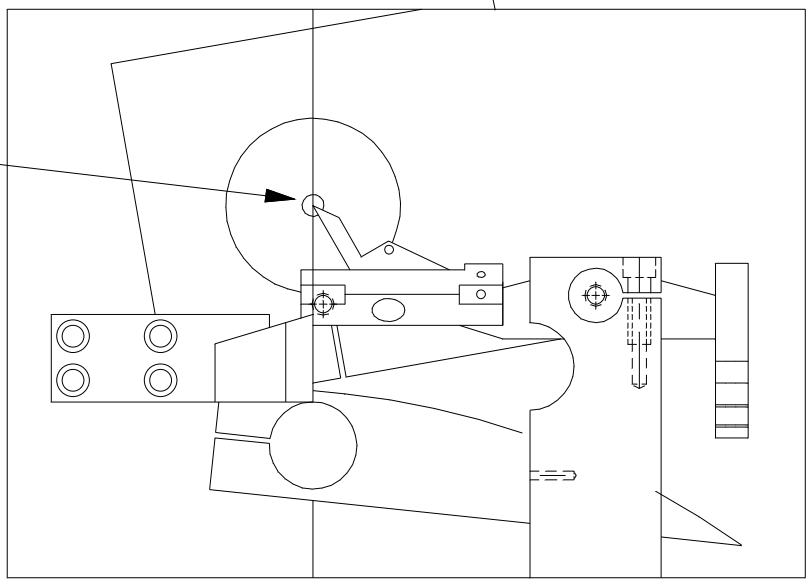


FIGURE (i-1)

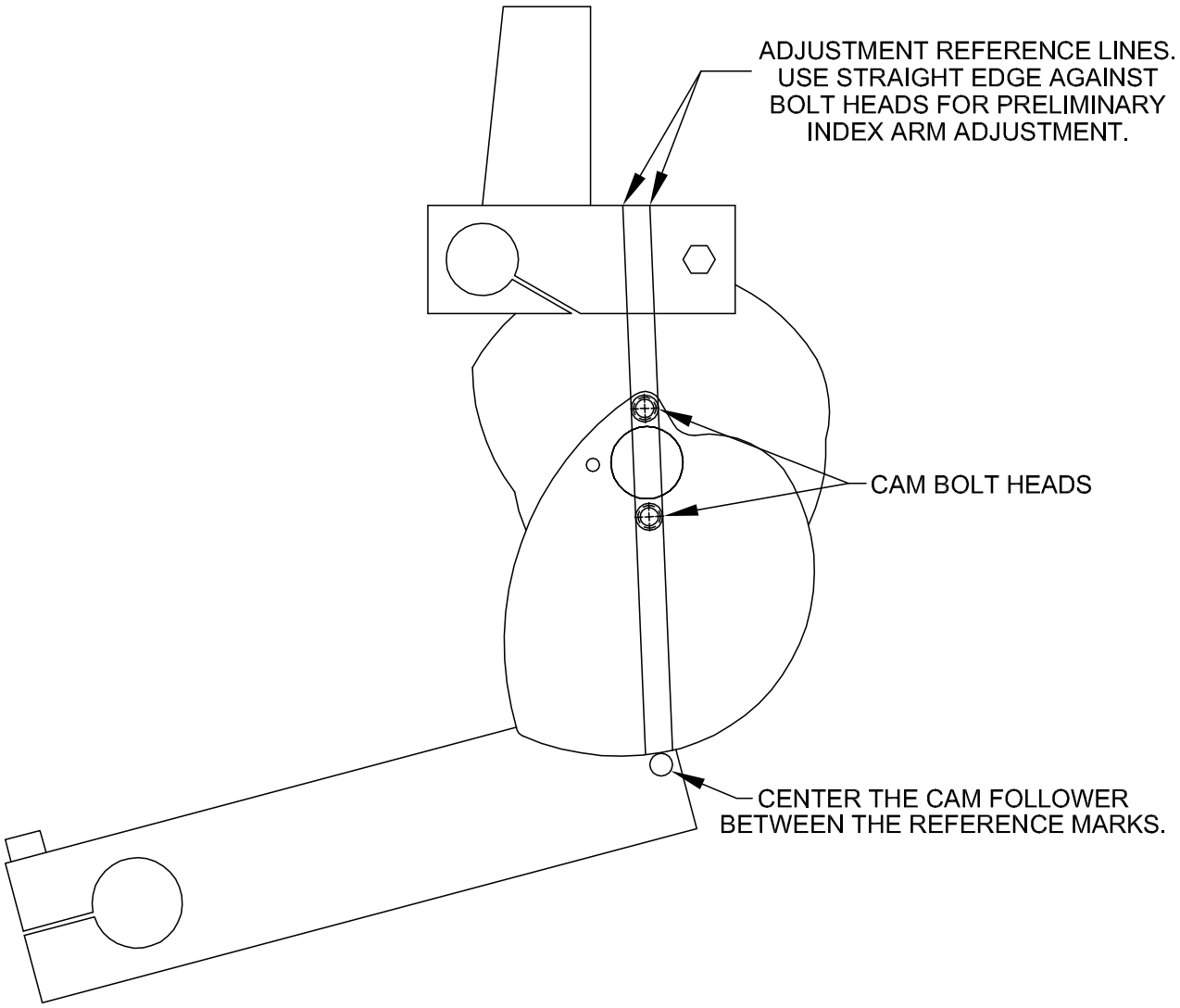
DETAIL

A 1/4" X 8" DOWEL ROD INSERTED INTO THE CENTER HOLE WILL SERVE AS A VISUAL REFERENCE POINT.



W-150 HD-B TOP & FACE SHARPENER

FIGURE (i-2)



W-150 HD-B TOP & FACE SHARPENER

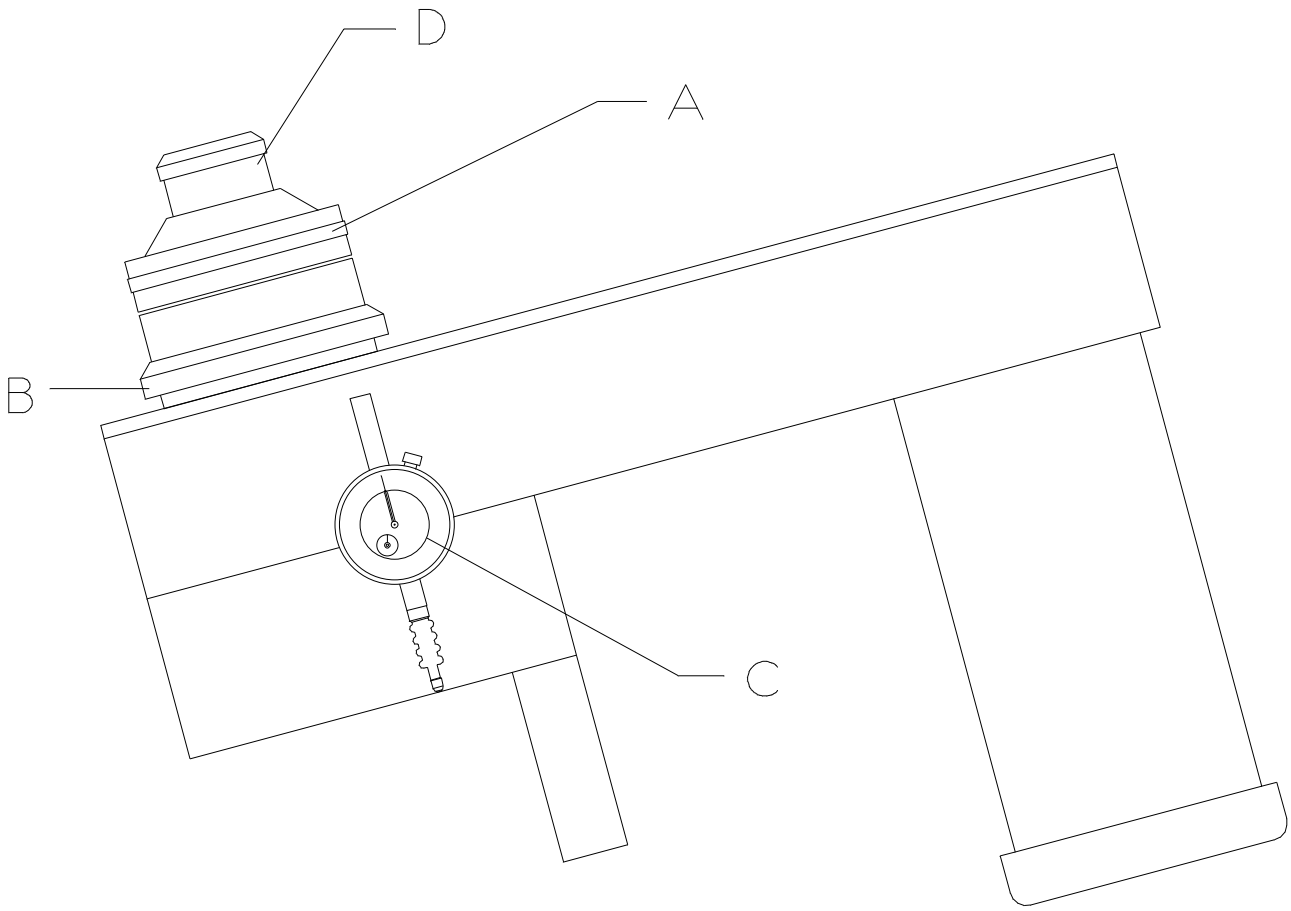
INSTALLING LIFT OFF CYLINDER

1. Remove nuts and allen bolts from top of head.
2. Remove cover with dial indicator.
3. Remove roll pin and nut from bottom of lead screw (part # W-1368).
4. Knob "D" has allen screw in center, loosen and spin knob off.
5. Ring "A" has two allen set screws in the side of ring. Loosen and spin the ring off.
6. Tap on top plate of head to remove. Top plate is pinned at both ends to locate top to head.
7. Unhook hose's from cylinder. Mark where the hose's were hook to cylinder. Green and yellow hose's can be cut next to the brass fitting that connects them to the clear line.
8. Turn the top plate upside down and pull the two roll pins from the anti-rotation nut.
9. Screw the lead screw out the bottom of the cylinder.
10. Remove two allen bolts and take the cylinder off.
11. Install the new cylinder with two allen bolts.
12. Install lead screw with anti-rotation nut and spring washers.
13. Put knob "D" on lead screw and run anti-rotation nut down until lead screw will not turn. Make sure spring washers the counter bore on the anti-rotation nut. Back off the anti-rotation nut until holes line up for the pins. No more than 1/16 turn. If needed mark and drill two new 1/8" holes 3/4" through the top plate.
14. Install top plate on head making sure the thrust bearings on the end of lead screw that goes through block # W-1367 are in correct bearings and then the thick ground washers are on the top and bottom.
15. Install nut the same side up as when removed. Install roll pin.
16. Hook up the air lines.
17. Install ring "A".

W-150 HD-B TOP & FACE SHARPENER

INSTALLING LIFT OFF CYLINDER CONTINUED

18. Install knob "D". Run lead screw down all the way. The nut on the bottom of the lead screw will hit bottom of head. Run knob "D" all the way down and back off 1/4 turn. Make sure ring "A" is all the way down when doing this.
19. Replace indicator cover.



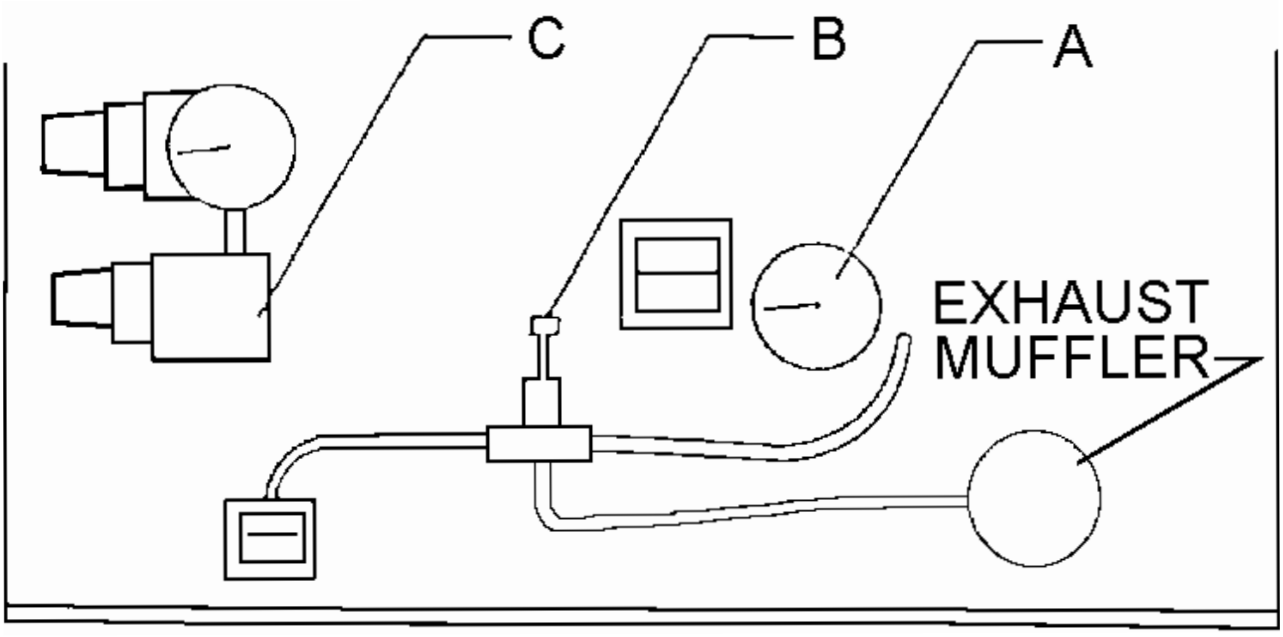
W-150 HD-B TOP & FACE SHARPENER

UNEVEN GRINDING

1. Is the saw free of rust and pitch.

2. Set tooth counter on 2. Start machine and let it stop by itself. Open rear cam cover. Check bleeder "B". It must be exhausting some air. Regulator "C" controls drag pressure and is set at 10 lbs. If this pressure is above 40 then the machine position limit switch 1 may need adjustment. See page 15 for proper adjustment. A lower than 10 lbs. setting may be necessary for the saw to index smoothly. To check mount saw, turn selector to run. Turn the saw by hand and see if it turns smoothly with about 5 lbs. of drag. If it does not, check the saw for plate damage or for saw center binding.

3. The index finger must contact the positive stop. This adjustment is designed to slip if an overload on the index occurs. To adjust open rear cam cover, rotate index cam figure #1 until it is 1/2" from the high point. Loosen clamp screw #1 and push front index cam against the positive stop, then lock the clamp screw.

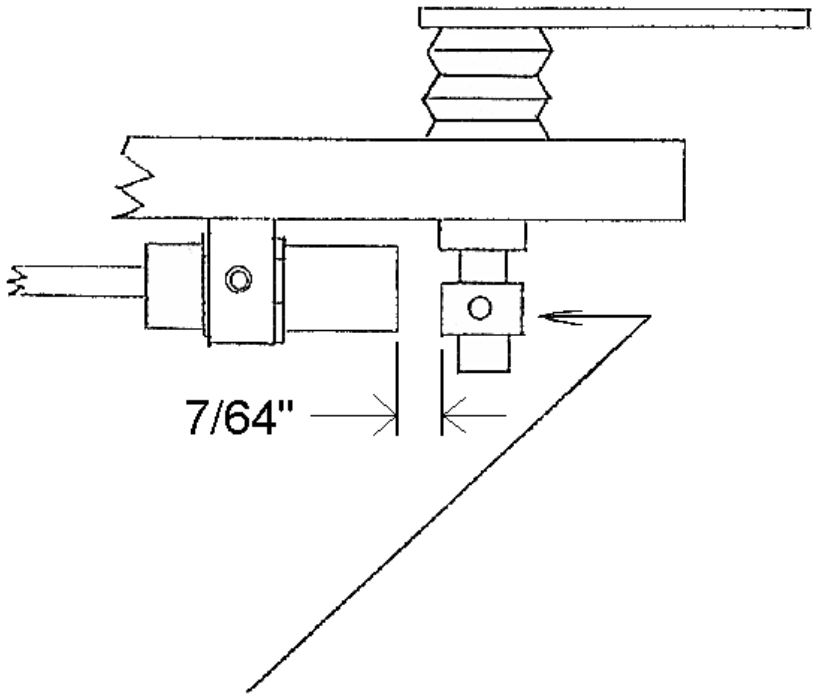


INSIDE OF REAR CAM COVER

W-150 HD-B TOP & FACE SHARPENER

HEIGHT SENSOR ADJUSTMENT

It may be necessary to set the location of the saw to a different height, adjustment shown below. Set sensor to stop saw when tip is 1/8" above top of new feed finger.



Loosen set screw and move collar up if you want the tooth lower. Down if you want it higher.

* Clean and Lubricate with light oil.

W-150 HD-B TOP & FACE SHARPENER

PLATE THICKNESS ADJUSTMENT

Due to wear of the clamp jaw and lead screw it may become necessary to recalibrate the plate thickness.

Step 1. After grinding an alternate top saw that is round and has even side clearance check the tooth height to see if the left and right teeth are the same height. This should be done on a run out test stand.

DIFFERENCE IN HEIGHT

	.001	.005	.010	.015
15 DEG	.002	.010	.020	.030
20 DEG	.0015	.007	.015	.021
25 DEG	.001	.005	.010	.015
30 DEG	.0009	.004	.009	.013

Step 2. Where the difference in tooth height and degree of top bevel cross is the amount that the plate thickness needs to be corrected.

EXAMPLE: .010 difference in height, 20 deg. bevel = .015.

Step 3. Note the number that the plate thickness is reading then loosen the set screw that locks the knob, and pull the knob straight out.

Step 4. If tooth A is high using example in Step 2., minus .015 from the reading that was on plate thickness and slide knob straight back on and lock.

Example: Plate thickness .125 - .015 = set on .110. If B is high add the plate thickness.

Step 5. Now set knob to actual saw plate thickness and grind saw.

Note: The saw being checked must have the same side clearance.

Note: When the plate thickness is turned full in it may not stop exactly at 0. This causes no problem and DO NOT adjust to get it to stop at 0.

W-150 HD-B TOP & FACE SHARPENER

ADJUSTING TENSION ON LIFT OFF LEAD SCREW

Begin by mounting the head top cover in a bench vise and lift off cylinder secured to top cover with two allen bolts (F-101). Insert lead screw (W-1368) through the assembly. Slip eight spring washers (F-68) on as sets of four, opposing one another. Spin the anti-rotation nut (W-1358) onto the shaft and down tight. Back off nut approximately 1/16 turn. Check shaft pre-load, if tension is correct then transfer punch with 5/32 punch. Remove W-1358 nut, F-68 spring washers, and W-1358 lead screw. Drill punch marks with 1/8" drill to approximate depth of .200".

Assemble the W-1368 lead screw, eight F-68 spring washers, and the W-1358 nut. Tighten for correct tension and drive two roll pins (F-405) in place. Note: Lightly spread loctight onto the roll pins. The correct tension on the new lead screw assembly should be fairly tight to compensate for "Break In".

W-150 HD-B TOP & FACE SHARPENER

RESETTING PLATE THICKNESS TO ZERO

Set up machine to top grind a saw with good side clearances, preferably an alternate bevel at 20° and a back angle of 15°.

Grind two tips with plate thickness set for saw and check with test stand. Adjust plate thickness knob until saw tip heights are correct within .0005 of an inch.

Note: Try to limit grinding as to remove as little material as possible while ensuring a complete clean grind. You may have to grind and check several times before finding the correct adjustment.

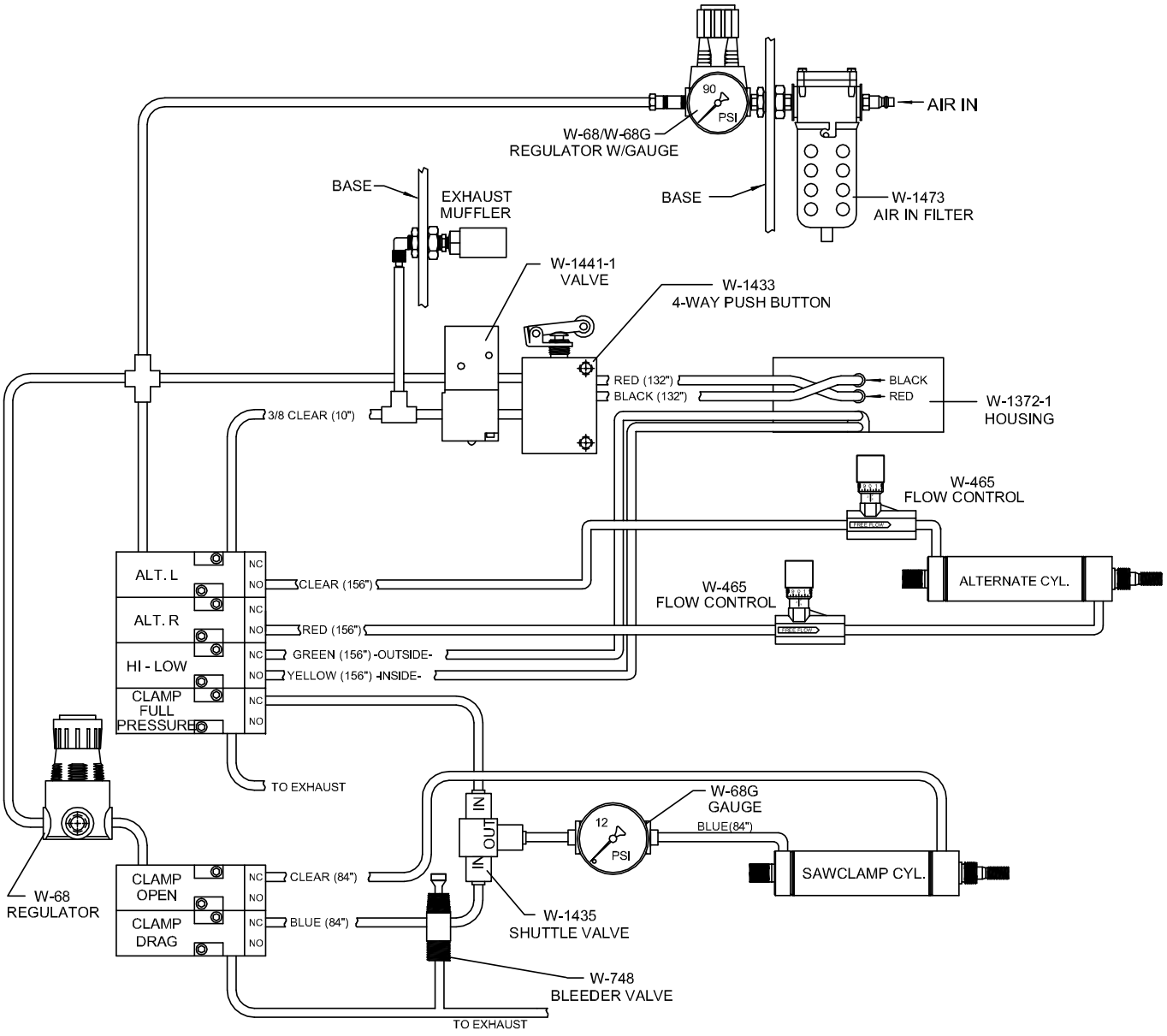
Remove two 6-32 UNC screws from the guard at the top of the plate thickness assembly to access "Zero Stop" screws and jam nuts. Loosen set screw on plate thickness knob to correct plate thickness: example .095, then tighten set screw. Loosen jam nuts on pivot support and set the zero stop screws in a couple of turns clockwise.

Rotate plate thickness knob down to and past zero, then rotate back to zero. Jam nuts and zero stop screws must be set to stop movement of the knob and to start only at zero. This removes any backlash in the knob before the zero or starting point. Take note of number of digits from below zero to zero. Set zero stop screws to acquire correct adjustment.

Run plate thickness out to saw plate thickness, grind and recheck. Continue until you can start at zero and dial in to achieve an accurate grind.

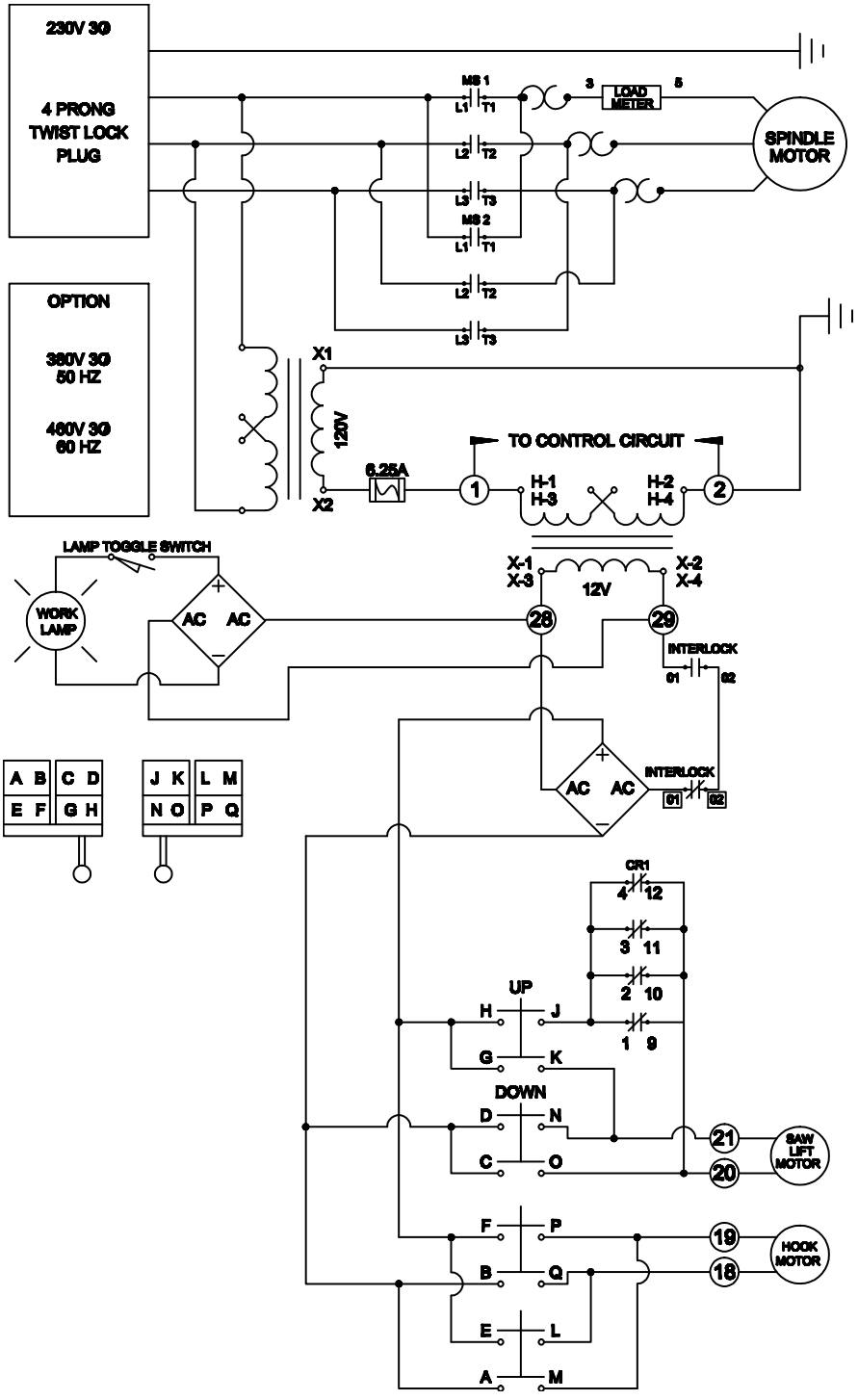
W-150 HD-B TOP & FACE SHARPENER

AIR SCHEMATIC



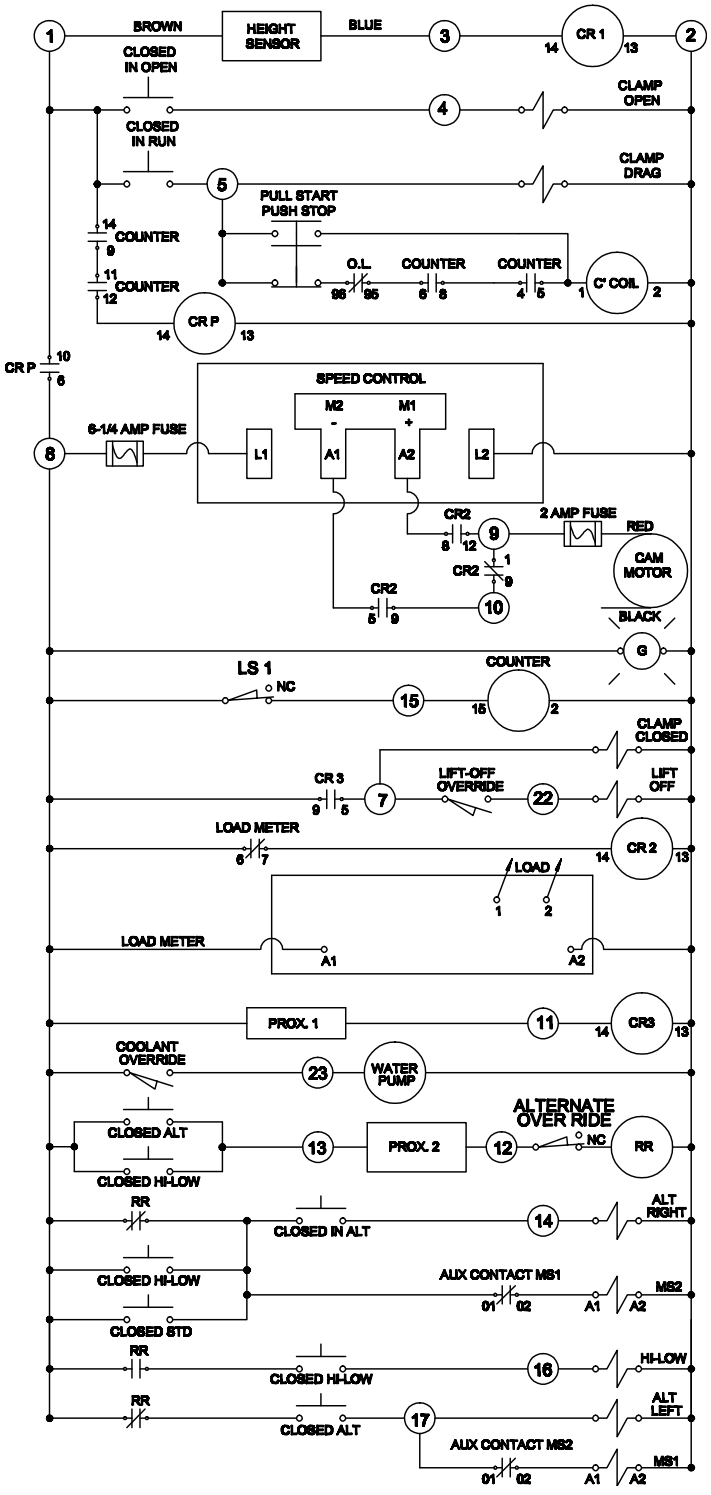
W-150 HD-B TOP & FACE SHARPENER

ELECTRICAL SCHEMATIC



W-150 HD-B TOP & FACE SHARPENER

ELECTRICAL SCHEMATIC



W-150 HD-B TOP & FACE SHARPENER

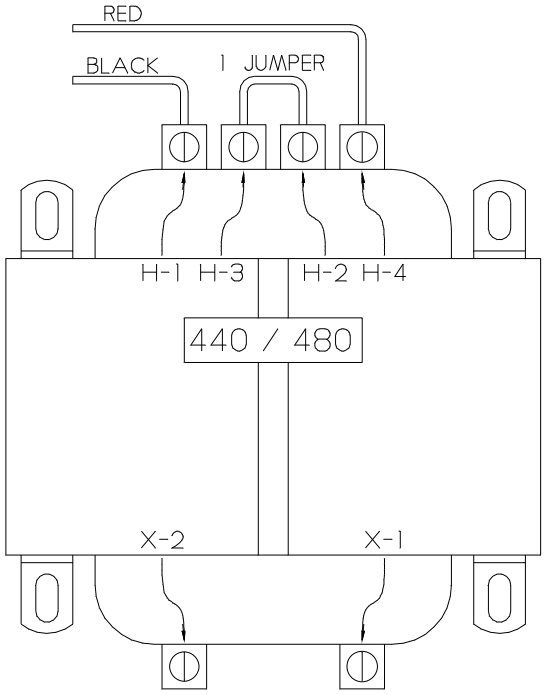
CONVERTING SERVICE VOLTAGE
*** NOTE: DISCONNECT POWER FIRST! ***

Converting 220V to 440V

MOTOR CONNECTIONS

LINE 1	WHITE
LINE 2	RED
LINE 3	BLACK

JUMP TOGETHER 6 & 9
5 & 8
4 & 7



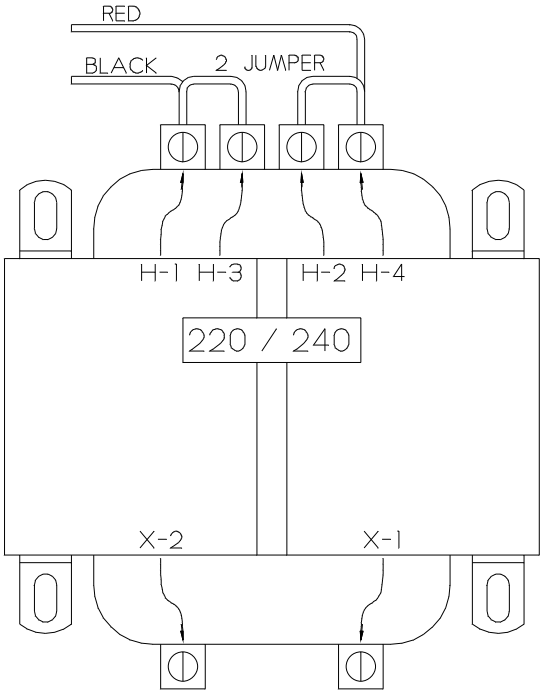
SET MOTOR STARTER
OVERLOAD AT 3 - 3.2

Converting 440V to 220V

MOTOR CONNECTIONS

LINE 1+7	WHITE
LINE 2+8	RED
LINE 3+9	BLACK

JUMP TOGETHER 4, 5, 6



SET MOTOR STARTER
OVERLOAD AT 4 - 4.1

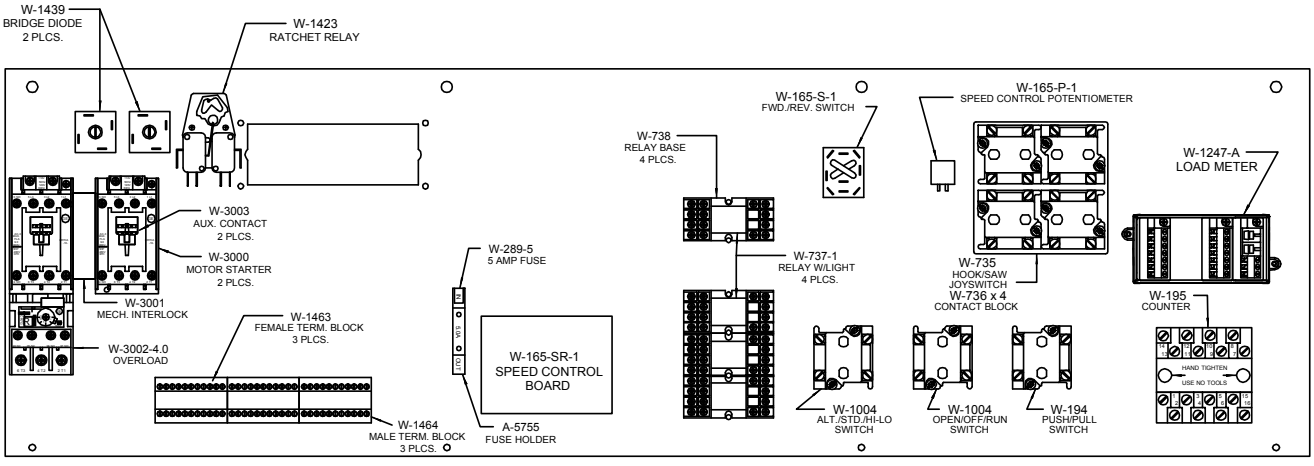
W-150 HD-B TOP & FACE SHARPENER

PARTS LIST

The following parts lists are areas within the machine broken down into various individual assemblies.

INSIDE CONTROL PANEL

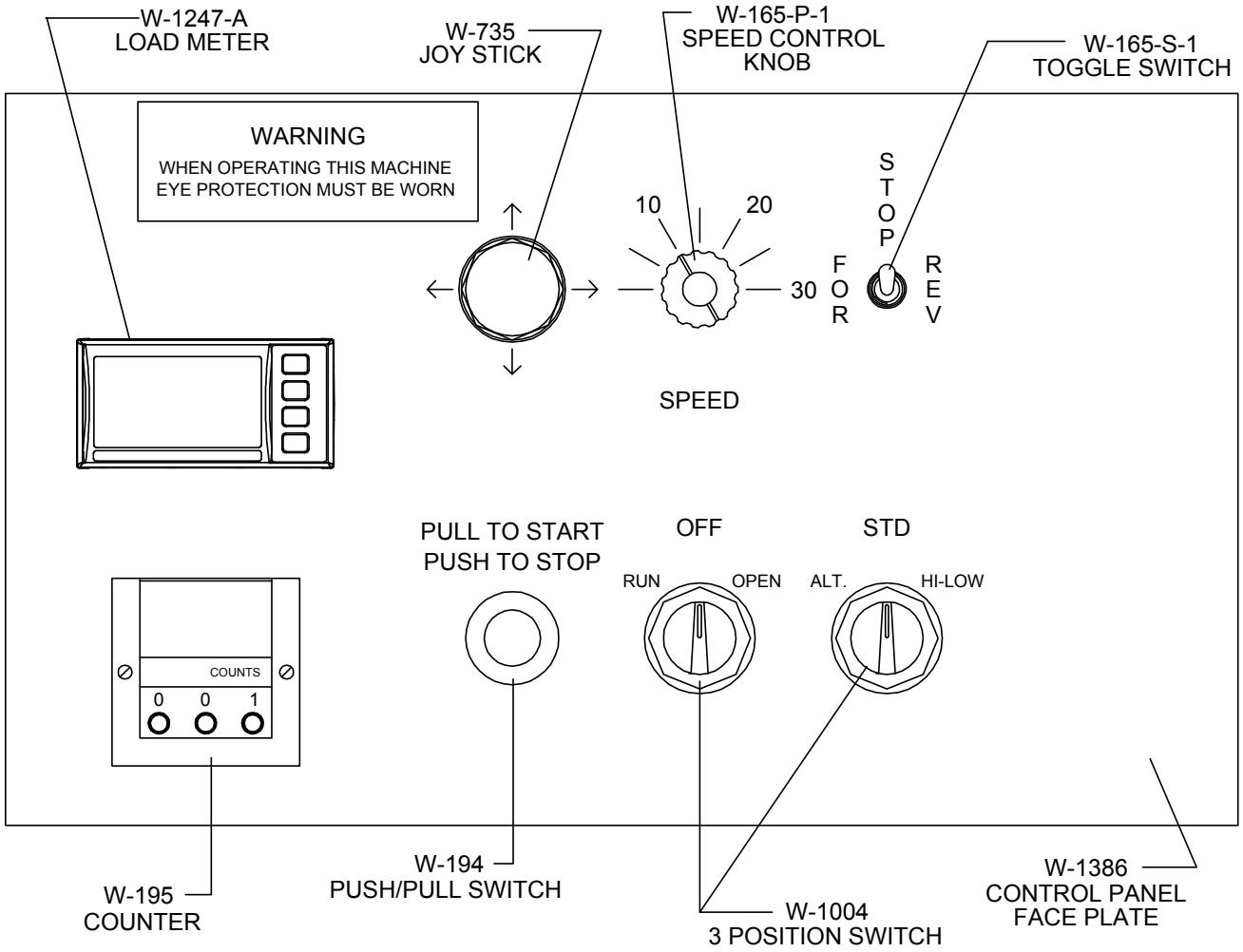
QTY	PART NUMBER	DESCRIPTION
2	W-1439	DIODE
2	W-3000	MOTOR STARTER
1	W-3001	MECHANICAL INTERLOCK
1	W-3002-4.0	OVERLOAD
2	W-3003	AUX. CONTACT
1	W-165-SR-1	SPEED CONTROL BOARD
1	W-1425	RELAY BASE
1	W-1426	RELAY
4	W-738	RELAY BASE
4	W-737-1	RELAY WITH LIGHT
1	W-289-5	5 AMP FUSE
1	A-5755	FUSE HOLDER



W-150 HD-B TOP & FACE SHARPENER

OUTSIDE CONTROL PANEL (LEFT SIDE)

QTY	PART NUMBER	DESCRIPTION
1	W-1427-A	LOAD METER
1	W-735	JOY STICK
1	W-1497	BOOT FOR TOGGLE SWITCH
1	W-165-S-1	TOGGLE SWITCH
1	W-165-P-1	SPEED CONTROL KNOB
1	W-195	COUNTER
1	W-194	PUSH PULL SWITCH
2	W-1004	3 POSITION SWITCH
1	W-1386	CONTROL PANEL FACE PLATE



W-150 HD-B TOP & FACE SHARPENER

GRINDING HEAD

QTY	PART NUMBER	DESCRIPTION
1	W-1372-B	LIFT OFF CYLINDER STACK ASSEMBLY
1	W-1725-2	MOTOR PULLEY
1	W-1725-1	SPINDLE PULLEY
1	W-1726	SPINDLE BELT
1	W-1368	LEAD SCREW
1	W-1409-1	SPINDLE MOTOR
2	W-437	GROUND WASHER
2	W-667	GROUND WASHER
1	W-677	DUST BOOT
2	W-436	THRUST BEARING
1	W-1365-A	SPINDLE ASSEMBLY
1	W-1367	LEAD SCREW ATTACHMENT
1	W-1377	INDICATOR
1	W-1329	INDICATOR COVER
4	F-304	SCREW
1	W-153-A	WHEEL HUB NUT
2	F-369	SPINDLE SPLASH COVER SCREW
1	W-1364-1	SPINDLE SPLASH COVER
1	W-1363-1	WHEEL COVER
1	F-107-M	WHEEL COVER SCREW
1	F-101	HEAD MOUNT SCREW
1	F-143	AIR LINE SCREW
1	C-5302	AIR LINE LOOM
1	F-127	AIR LINE SCREW
1	C-5303	AIR LINE LOOM
4	F-358	SCREW
2	W-1361	BUSHING
1	W-1360	HEAD WELDMENT
2	F-18	JAM NUT
2	F-60	1/4 WASHER
2	F-15	5/16 NUT
4	A-5304	AIR DISCONNECT
4	F-638	BARBED FITTING

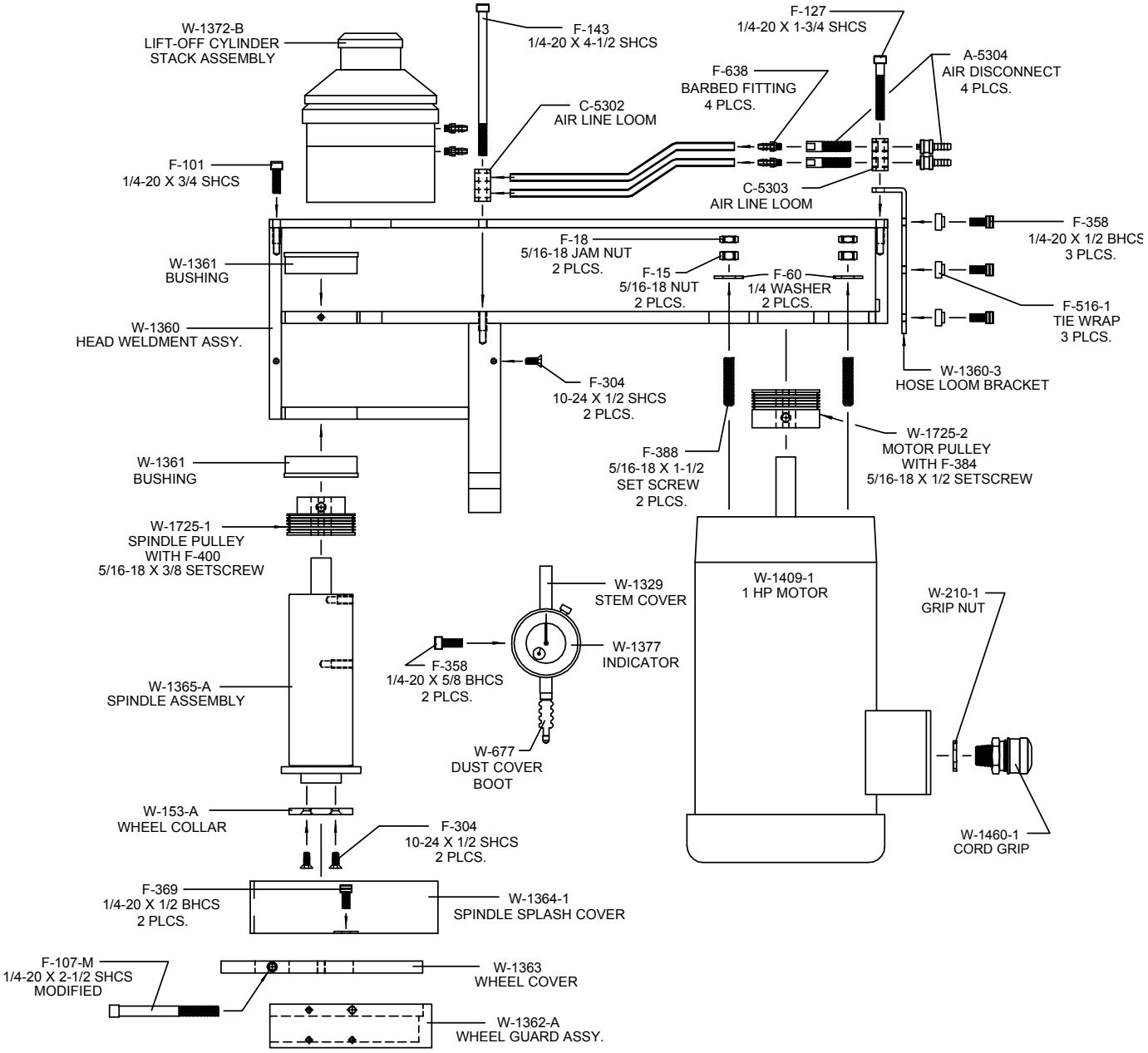
W-150 HD-B TOP & FACE SHARPENER

GRINDING HEAD

QTY	PART NUMBER	DESCRIPTION
3	F-516-1	CABLE TIE
1	W-1360-3	HOSE LOOM BRACKET
2	F-388	SET SCREW
1	W-1409-1	1 H.P. MOTOR
1	W-210-1	GRIP NUT
1	W-1460-1	CORD GRIP
1	W-1362-A	WHEEL GUARD ASSEMBLY

W-150 HD-B TOP & FACE SHARPENER

GRINDING HEAD



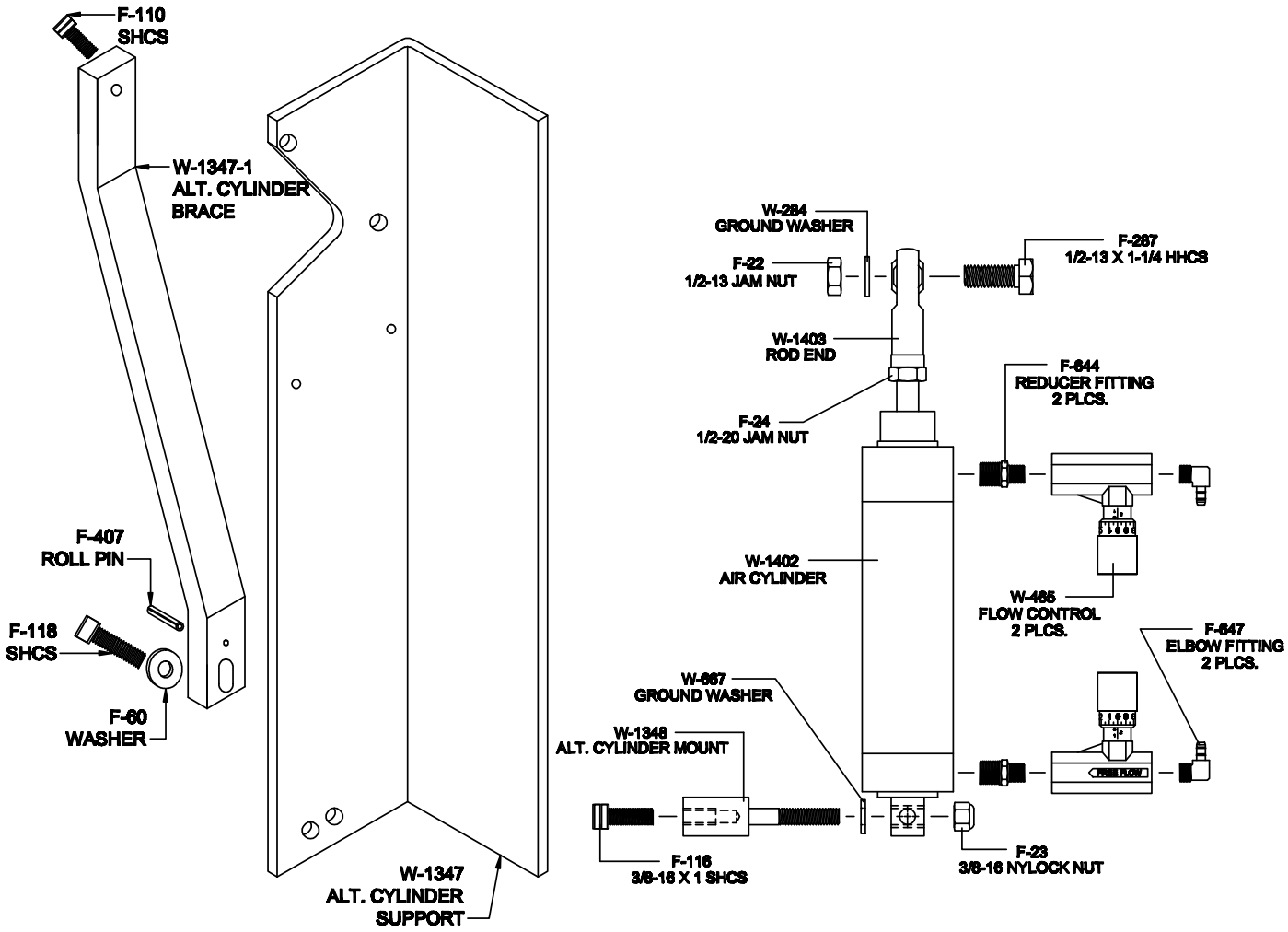
W-150 HD-B TOP & FACE SHARPENER

ALTERNATING CYLINDER ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
1	F-22	1/2-13 JAM NUT
1	F-23	3/8-16 NYLOCK NUT
1	F-24	1/2-20 JAM NUT
1	F-29	ACORN NUT
4	F-64	WASHER
1	F-118	3/8-16 BOLT
1	F-287	1/2-13 BOLT
2	F-644	REDUCER FITTING
2	F-647	ELBOW FITTING
1	W-284	GROUND WASHER
2	W-465	FLOW CONTROL
1	W-1348	ALTERNATE CYLINDER MOUNT
1	W-1402	AIR CYLINDER
1	W-1403	ROD END

W-150 HD-B TOP & FACE SHARPENER

ALTERNATE CYLINDER ASSEMBLY



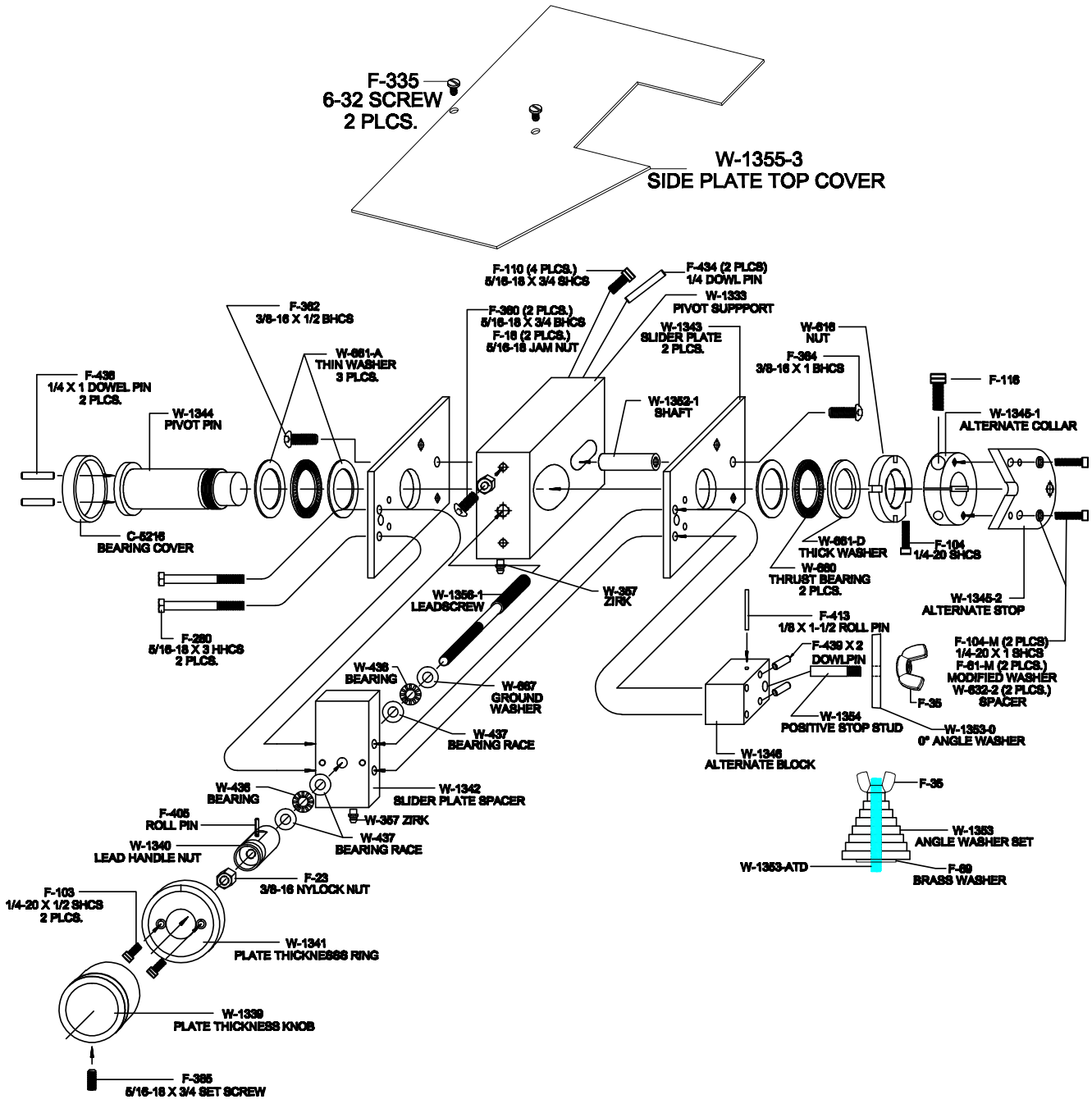
W-150 HD-B TOP & FACE SHARPENER

PLATE THICKNESS ASSEMBLY

QTY	PART #	DESCRIPTION
2	F-18	5/16" JAM NUT
1	F-23	3/8" NUT
2	F-35	3/8-16 WING NUT
2	F-61-M	MODIFIED WASHER
1	F-69	BRASS WASHER
2	F-103	1/4" SCREW
1	F-104	1/4-20 SHCS
12	F-104-M	1/4-20 SHCS
4	F110	5/16-18 SHCS
1	F-116	3/8-16 SHCS
2	F-280	5/16" BOLT
2	F-360	5/16" SCREW
1	F-362	3/8" SCREW
1	F-364	3/8" SCREW
1	F-385	5/16" SET SCREW
1	F-405	1/8" ROLL PIN
1	F-413	ROLL PIN
2	F-436	1/4" DOWEL PIN
1	F-438-1	WOODRUF KEY
4	F-439	1/4" DOWEL PIN
2	F-335	6-32 SCREW
2	W-357	ZIRK
2	W-436	BEARING
3	W-437	BEARING RACE
1	W-616	SPANNER NUT
2	W-632-2	SPACER
2	W-660	THRUST BEARING
3	W-661-A	THIN GROUND WASHER
1	W-661-D	THICK GROUND WASHER
1	W-667	GROUND WASHER
1	W-1333	PIVOT SUPPORT
1	W-1339	PLATE THICKNESS KNOB
1	W-1340	LEAD HANDLE NUT
1	W-1341	PLATE THICKNESS RING
2	W-1343	SLIDER PLATE
1	W-1344	PIVOT PIN
1	W-1345-1	ALTERNATE COLLAR
1	W-1345-2	ALTERNATE STOP
1	W-1346	ALTERNATE BLOCK
1	W-1352-1	SHAFT
1	W-1353-0°	WASHER
1	W-1353	ANGLE WASHER SET
1	W-1353-ATD	THREAD ROD
1	W-1353-3	SIDE PLATE END COVER
1	W-1354	POSITIVE STOP STUD
1	W-1356	LEADSCREW
1	C-5216	BEARING COVER

W-150 HD-B TOP & FACE SHARPENER

PLATE THICKNESS ASSEMBLY



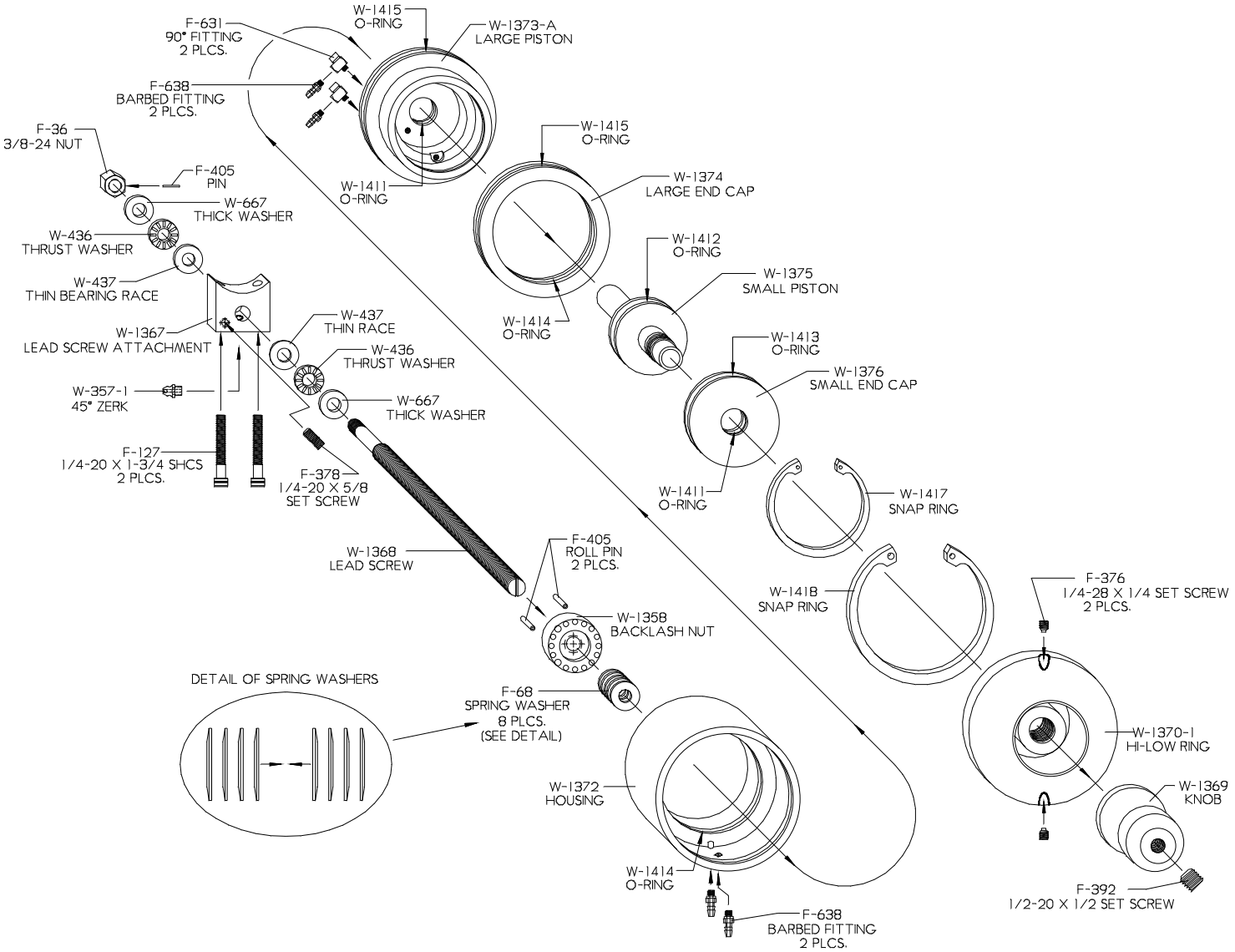
W-150 HD-B TOP & FACE SHARPENER

LIFT OFF CYLINDER STACK ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
1	F-36	3/8" NUT
3	F-405	PIN
2	W-667	THICK WASHER
2	W-436	THRUST WASHER
2	W-437	THIN BEARING RACE
1	W-1367	LEAD SCREW ATTACHMENT
1	W-357-1	45° ZERK FITTING
2	F-127	1/4" BOLT
1	F-378	1/4"SET SCREW
1	W-1368	LEADSCREW
1	W-1358	BACKLASH NUT
8	F-68	SPRING WASHER
4	F-638	BARBED FITTING
1	W-1372	HOUSING
2	W-1414	O-RING
2	F-631	90° AIR FITTING
2	W-1415	O-RING
1	W-1373-A	LARGE PISTON
1	W-1374	LARGE END CAP
1	W-1412	O-RING
1	W-1375	SMALL PISTON
2	W-1411	O-RING
1	W-1413	O-RING
1	W-1417	SNAP RING
1	W-1418	SNAP RING
2	F-376	1/4" SET SCREW
1	W-1370-1	HI-LOW RING
1	W-1369	KNOB
1	F-392	1/2" SET SCREW
1	W-1376	SMALL ENDCAP

W-150 HD-B TOP & FACE SHARPENER

LIFT OFF CYLINDER STACK ASSEMBLY



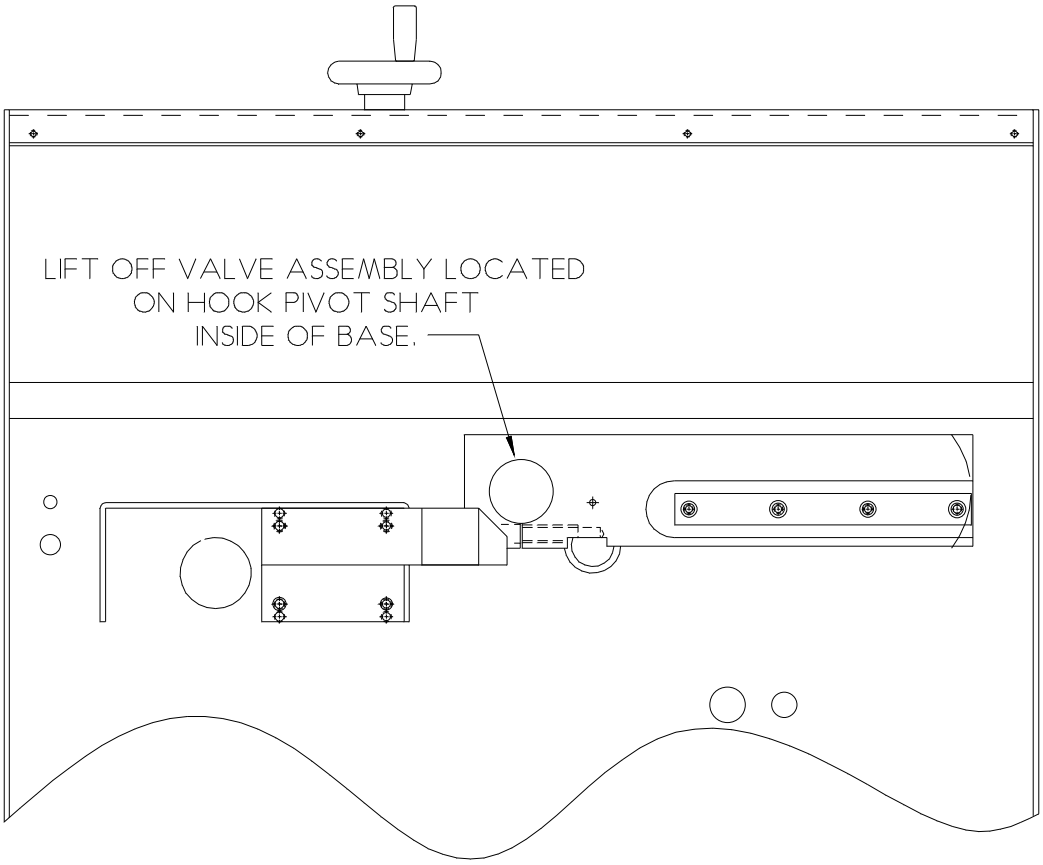
W-150 HD-B TOP & FACE SHARPENER

LIFT OFF VALVE ASSEMBLY

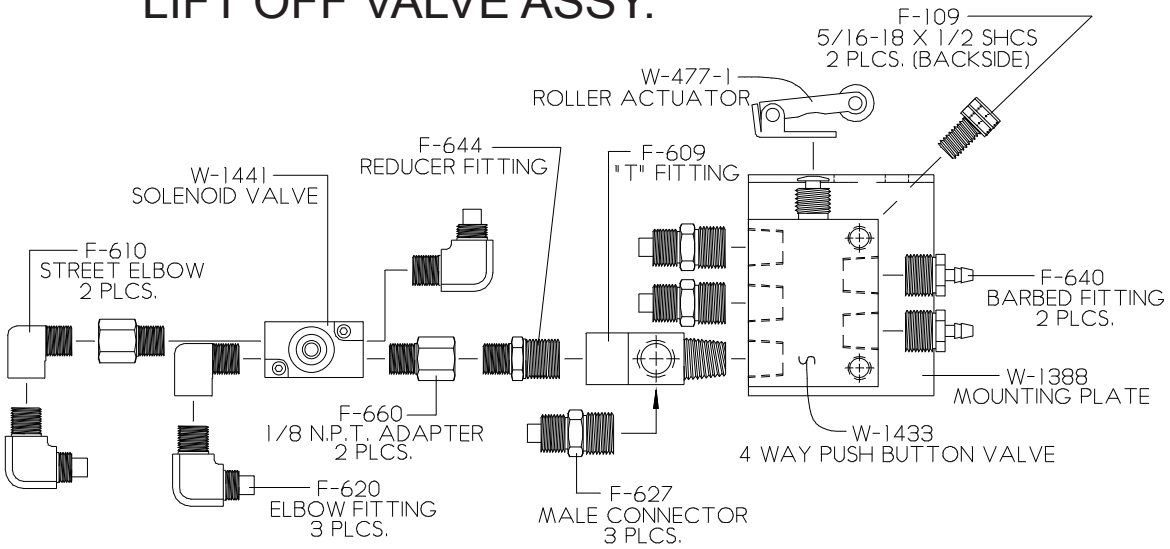
QTY	PART NUMBER	DESCRIPTION
1	W-1441	SOLENOID VALVE
2	F-610	STREET ELBOW
1	F-644	REDUCER FITTING
2	F-660	1/8 NPT ADAPTER
3	F-620	ELBOW FITTING
1	F-609	"T" FITTING
3	F-627	MALE CONNECTOR
1	W-477-1	ROLLER ACTUATOR
1	W-1433	4 WAY PUSH BUTTON VALVE
1	W-1388	MOUNTING PLATE
2	F-640	BARBED FITTING
2	F-109	5/16" SCREW

W-150 HD-B TOP & FACE SHARPENER

LIFT OFF VALVE ASSEMBLY



LIFT OFF VALVE ASSY.



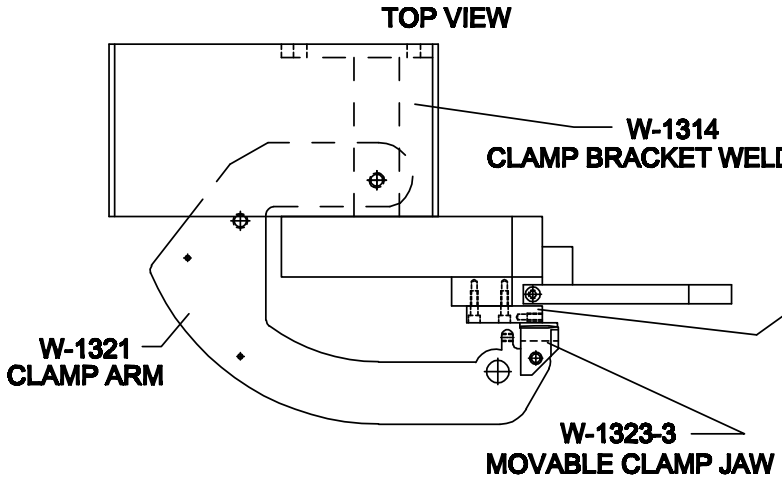
W-150 HD-B TOP & FACE SHARPENER

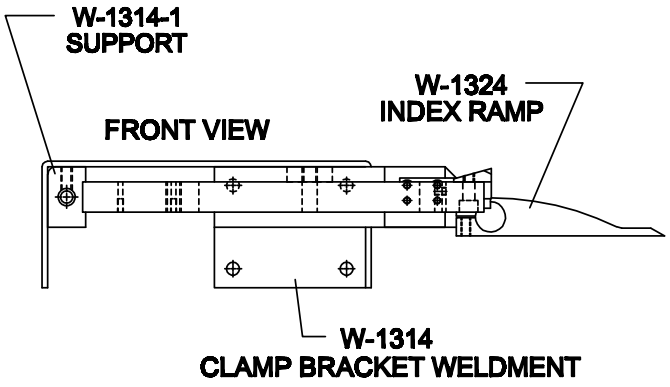
SAW CLAMP ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
1	F-31	1/2-13 ACORN NUT
2	F-56	#10 FLAT WASHER
1	F-110	5/16-18 RAMP PINCH BOLT
1	F-267-M	MODIFIED BOLT
2	F-333	10-24 SLOT HEAD SCREW
1	F-357	ZIRK
2	F-378	1/4-20 SET SCREW
1	C-5445	DUST CAP
1	W-1325	HEIGHT SENSOR ARM
1	W-1322-3	FIXED CLAMP JAW
1	W-1323-3	LARGE MOVABLE CLAMP JAW
3	W-435	GROUND WASHER
2	W-434	THRUST BEARING
2	W-284	GROUND WASHER
1	W-1328	CYLINDER BUMPER
1	W-1402	CYLINDER
1	W-1403	CYLINDER ROD END
1	W-1324	INDEX RAMP
1	W-1326	SENSOR SHAFT
1	W-231	SET COLLAR
1	W-1404	PROXIMITY SENSOR
1	W-1314-1	CLAMP BRACKET SUPPORT

W-150 HD-B TOP & FACE SHARPENER

SAW CLAMP ASSEMBLY



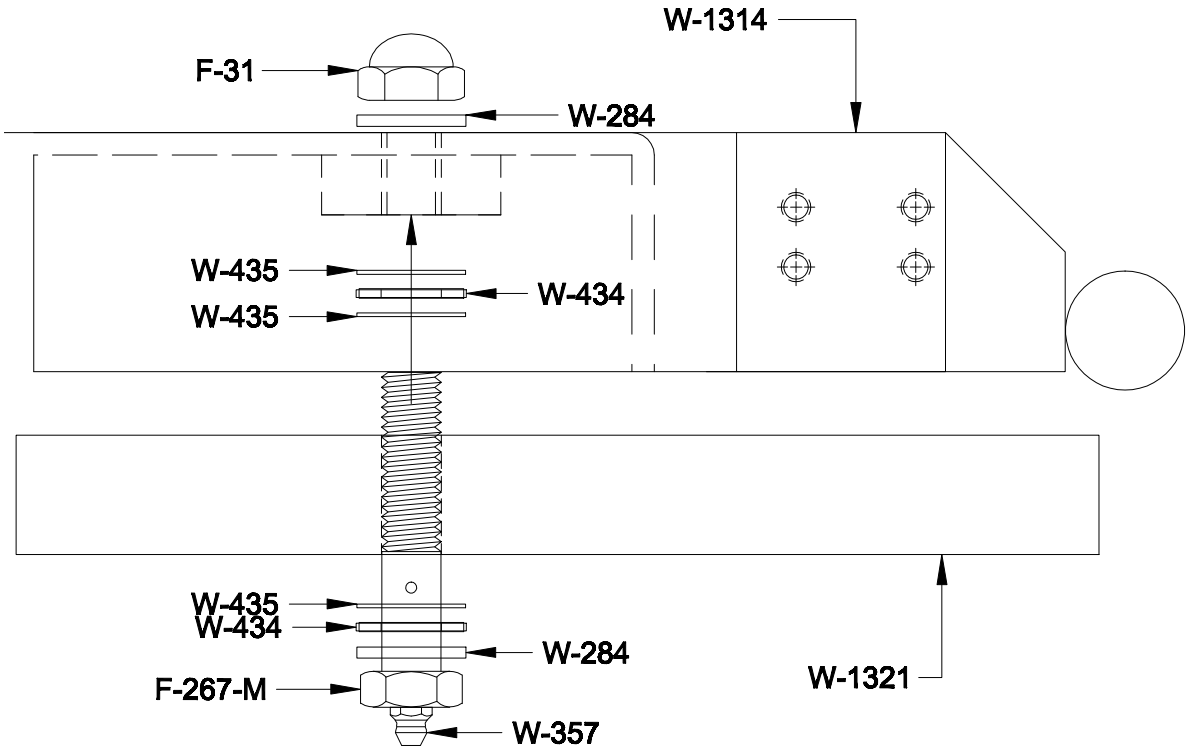


MISC. PARTS INCLUDE . . .

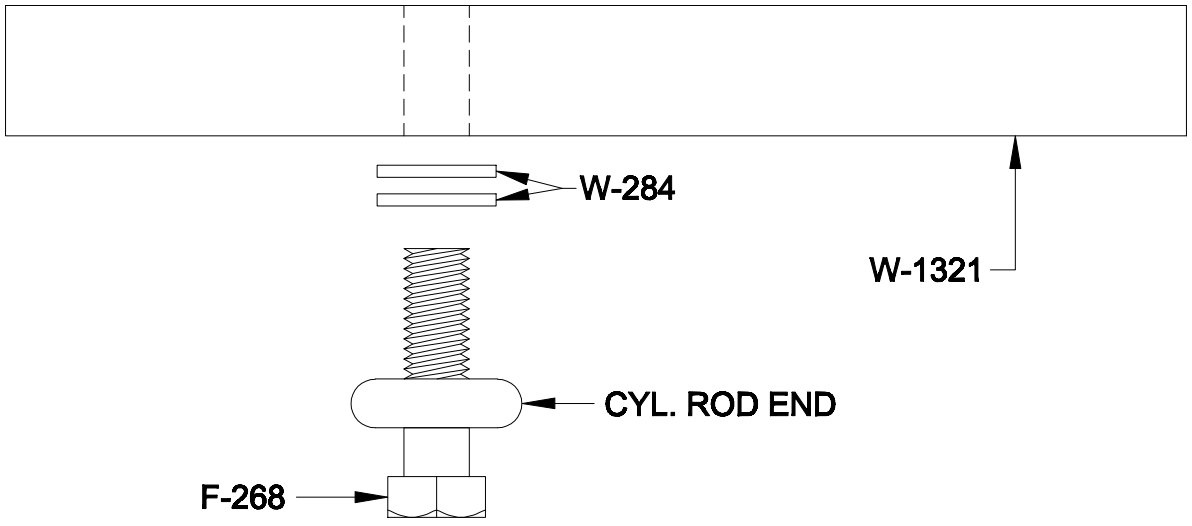
QU.	PART #	DESCRIPTION
1	F-24	1/2-20 JAM NUT
4	F-101	1/4-20 X 3/4 SHCS
1	F-118	3/8-16 X 1 SHCS
1	F-268	1/2-13 X 1-3/4 HHCS
2	F-619	AIR FITTING
1	F-267-M	PIVOT BOLT MODIFIED
1	W-357	GREASE ZERK FITTING
3	W-284	WASHER
3	W-435	THIN GROUND WASHER
2	W-434	THRUST BEARING WASHER
1	F-31	ACORN NUT
1	F-110	RAMP PINCH BOLT
2	F-378	SET SCREW FOR JAWS
1	W-1328	5/8 RUBBER HOSE
1	W-1402	CYLINDER
1	W-1403	ROD END
1	F-115	3/8-16 SHCS
1	F-118	3/8-16 SHCS
1	W-1327	FRONT SENSOR COVER
1	W-1327-1	REAR SENSOR COVER

W-150 HD-B TOP & FACE SHARPENER

CLAMP ARM PIVOT



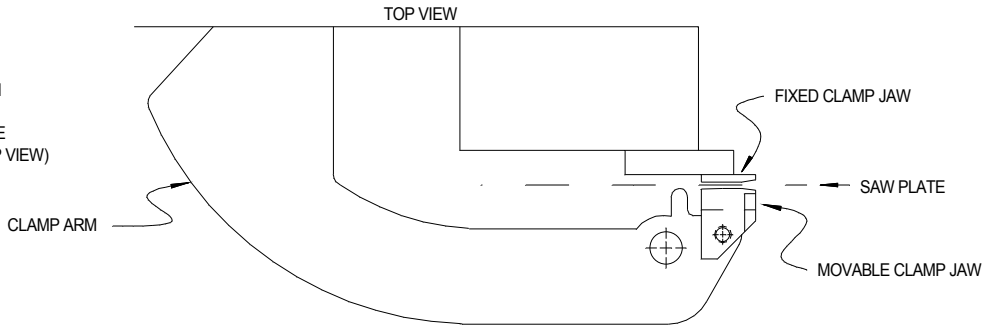
CLAMP ARM CYLINDER ROD END



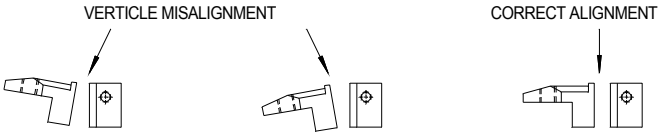
W-150 HD-B TOP & FACE SHARPENER

SAW CLAMP ASSEMBLY

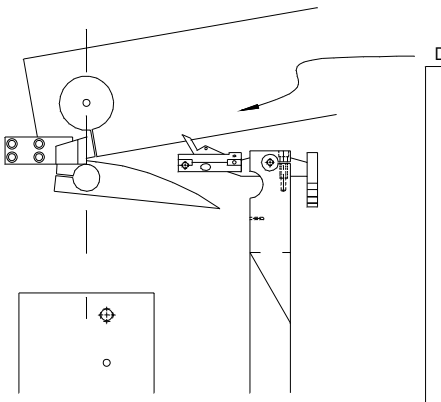
CLAMP JAWS ARE CORRECT WHEN FLAT CENTER PORTION OF OUTER CLAMP JAW IS FLAT AGAINST THE SAW PLATE USING DRAG PRESSURE. (TOP VIEW)



VIEWING FROM THE RIGHT END OF THE MACHINE, CHECK THE VERTICLE ALIGNMENT OF THE FIXED/OUTER CLAMP JAW. SHIM THE OUTER CLAMP JAW TO CORRECT FOR EXCESSIVE MISALIGNMENT.

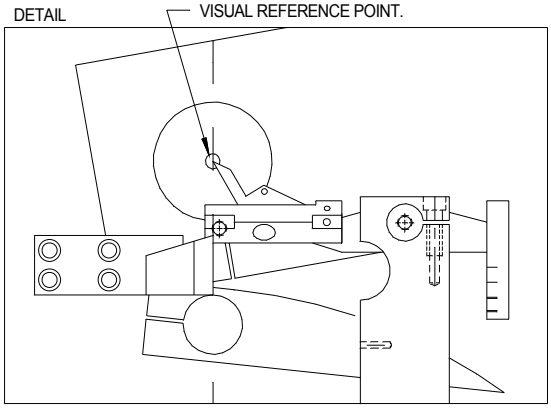


ADJUSTMENT OF POSITIVE STOP SHOULD BE CORRECT WHEN THE FEED FINGER IS ALIGNED WITH THE CENTERLINE OF THE MAIN PIVOT SHAFT.



DETAIL

A 1/4" X 8" DOWEL ROD INSERTED INTO THE CENTER HOLE WILL SERVE AS A VISUAL REFERENCE POINT.

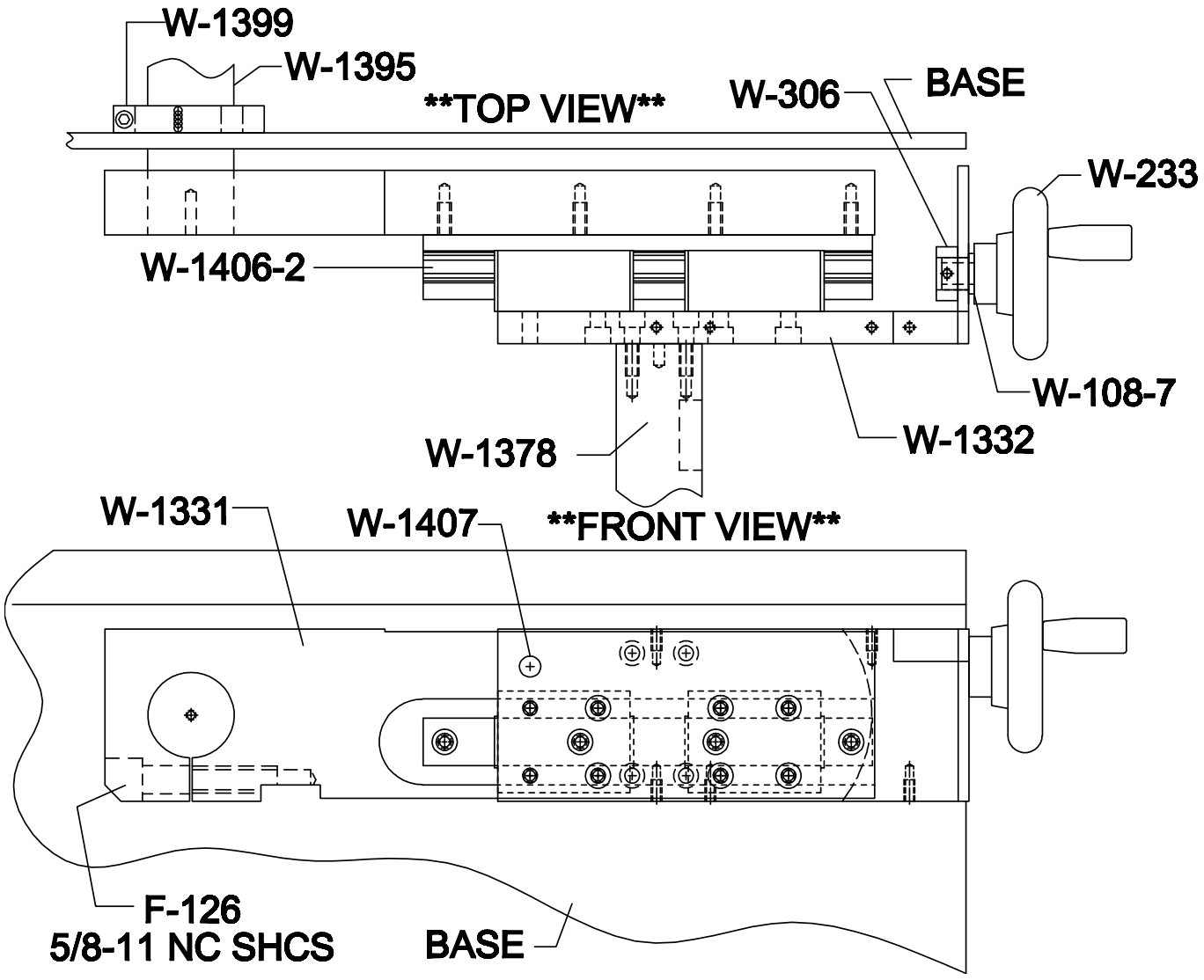


W-150 HD-B TOP & FACE SHARPENER

FEED SYSTEM ASSEMBLY

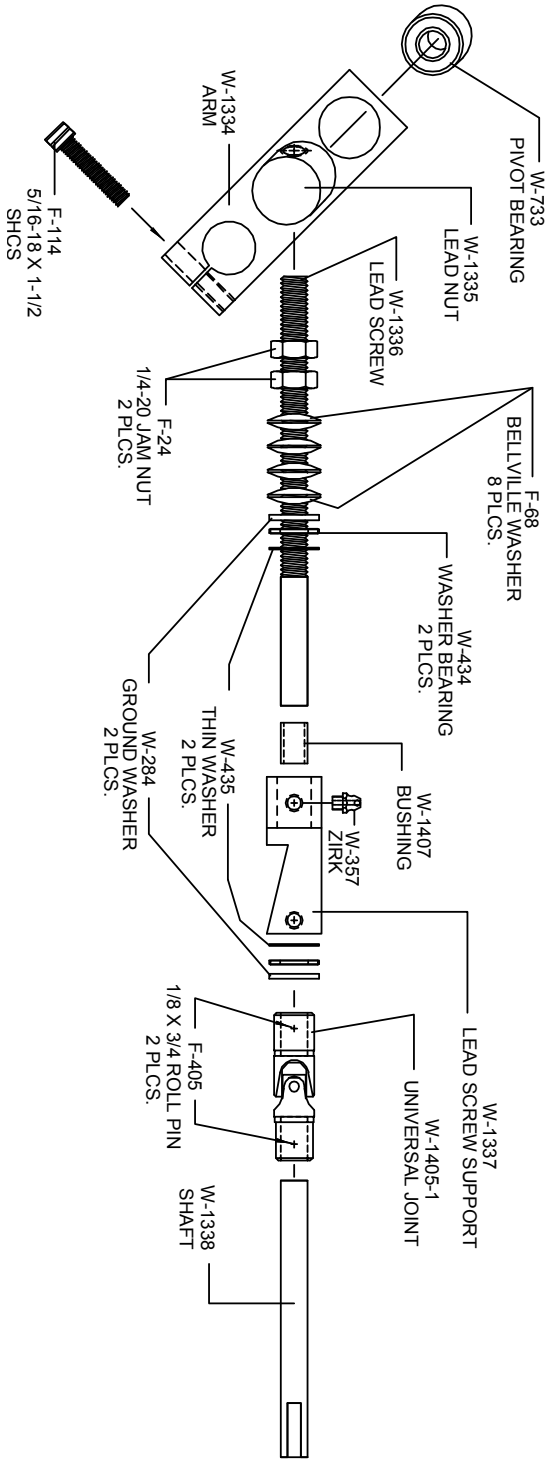
QTY	PART NUMBER	DESCRIPTION
1	W-1395	HOOK PIVOT SHAFT
1	W-108-7	BUSHING
1	W-306	SET COLLAR
1	W-1406-2	LINEAR TRUCK AND RAIL
1	W-1378	PIVOT SUPPORT
1	W-1332	BEARING MOUNT PLATE
1	W-233	HANDLE
1	W-1331	TRACK MOUNT
1	F-126	5/8" BOLT
1	W-1309	LEFT TRACK COVER
2	W-1311	RIGHT TRACK COVER
1	W-1407	BUSHING
1	F-158-M	PIVOT BOLT
1	W-1379	SCALE
1	W-1399	SPLIT COLLAR
1	W-901	2" SET COLLAR
1	W-1380	PIVOT PIN
4	F-134	8mm X 26 BOLT
6	F-131	8mm X 20 BOLT
2	F-132	8mm X 30 BOLT
2	F-58	1/4 FLAT WASHER

W-150 HD-B TOP & FACE SHARPENER



W-150 HD-B TOP & FACE SHARPENER

FEED SYSTEM ASSEMBLY CONTINUED



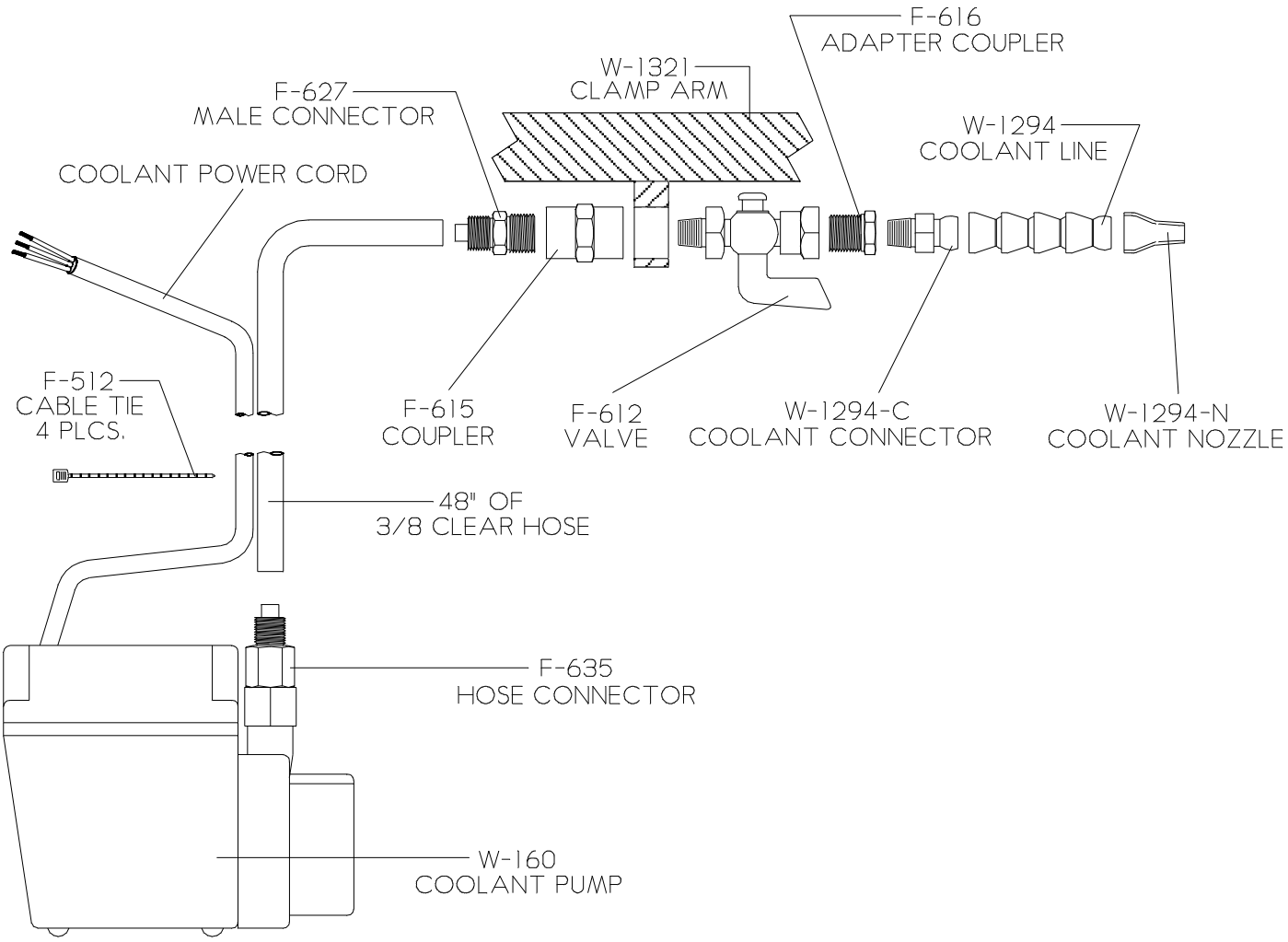
W-150 HD-B TOP & FACE SHARPENER

COOLANT SYSTEM

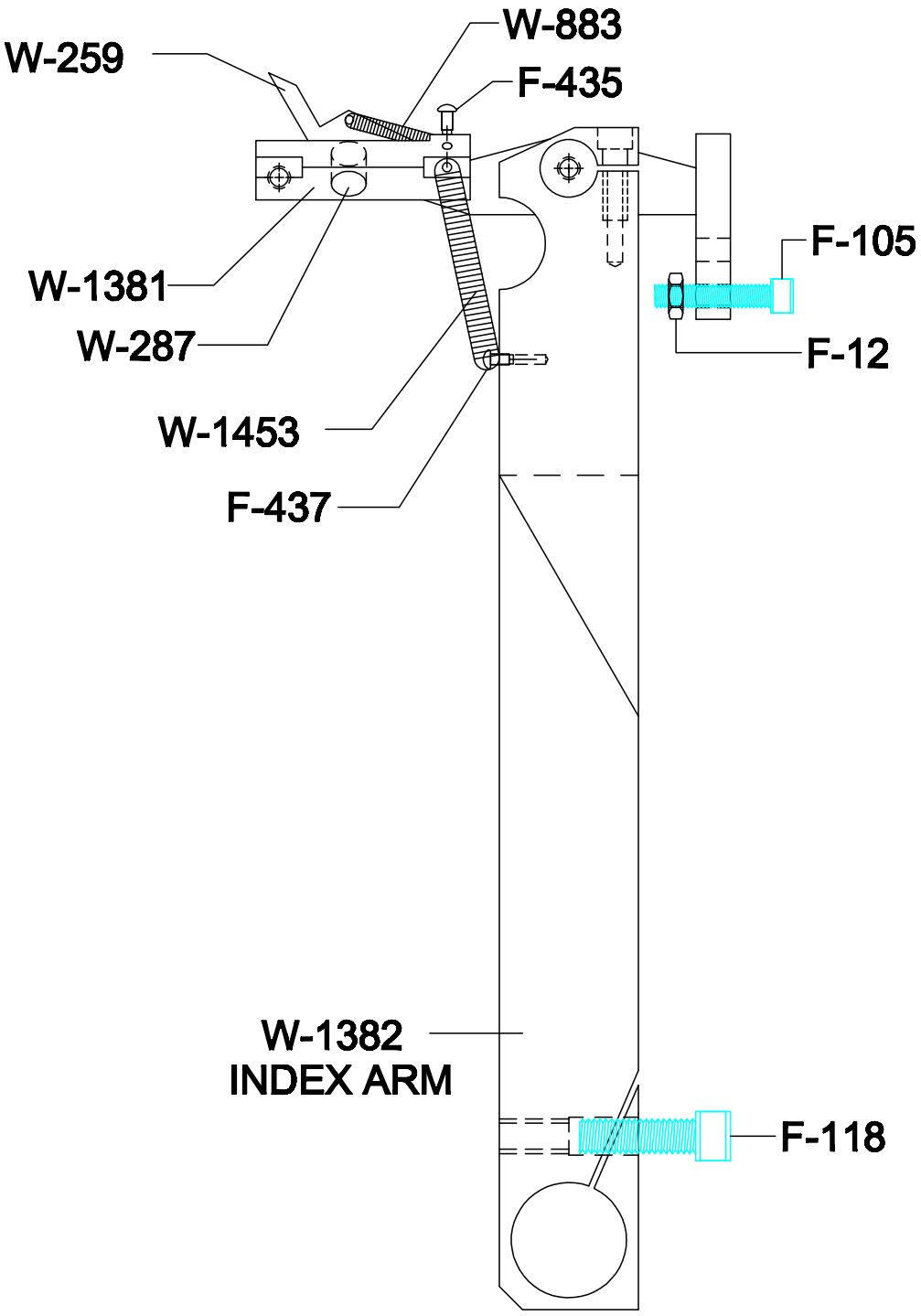
QTY	PART NUMBER	DESCRIPTION
1	F-612	WATER VALVE
20 PCS.	W-1294	COOLANT LINE
1	W-1294-C	COOLANT CONNECTOR
1	W-1294-N	COOLANT NOZZLE
48"	F-632	3/8 CLEAR FLEX COOLANT HOSE
1	W-160	COOLANT PUMP
4	F-512	CABLE TIE
1	F-635	CONNECTOR FITTING
1	F-615	COUPLER
1	F-616	ADAPTER COUPLER
1	F-627	MALE HOSE CONNECTOR

W-150 HD-B TOP & FACE SHARPENER

COOLANT SYSTEM ASSEMBLY



W-150 HD-B TOP & FACE SHARPENER



W-150 HD-B TOP & FACE SHARPENER

QTY	PART NUMBER	DESCRIPTION
1	F-12	NUT
3	F-61-5	MODIFIED WASHER
1	F-105	SHCS
2	F-118	SHCS
1	F-305	FHCS
2	F-366	BHCS
2	F-435	DRIVE SCREW
1	F-435	DRIVE SCREW
1	W-259	INDEX FINGER
2	W-188	INDEX RAMP BEARING
1	W-287	FINGER BOSS
1	W-883	SPRING FOR FINGER
1	W-1381	INDEX FINGER WELDMENT
1	W-300	SPRING
1	W-1382	INDEX ARM

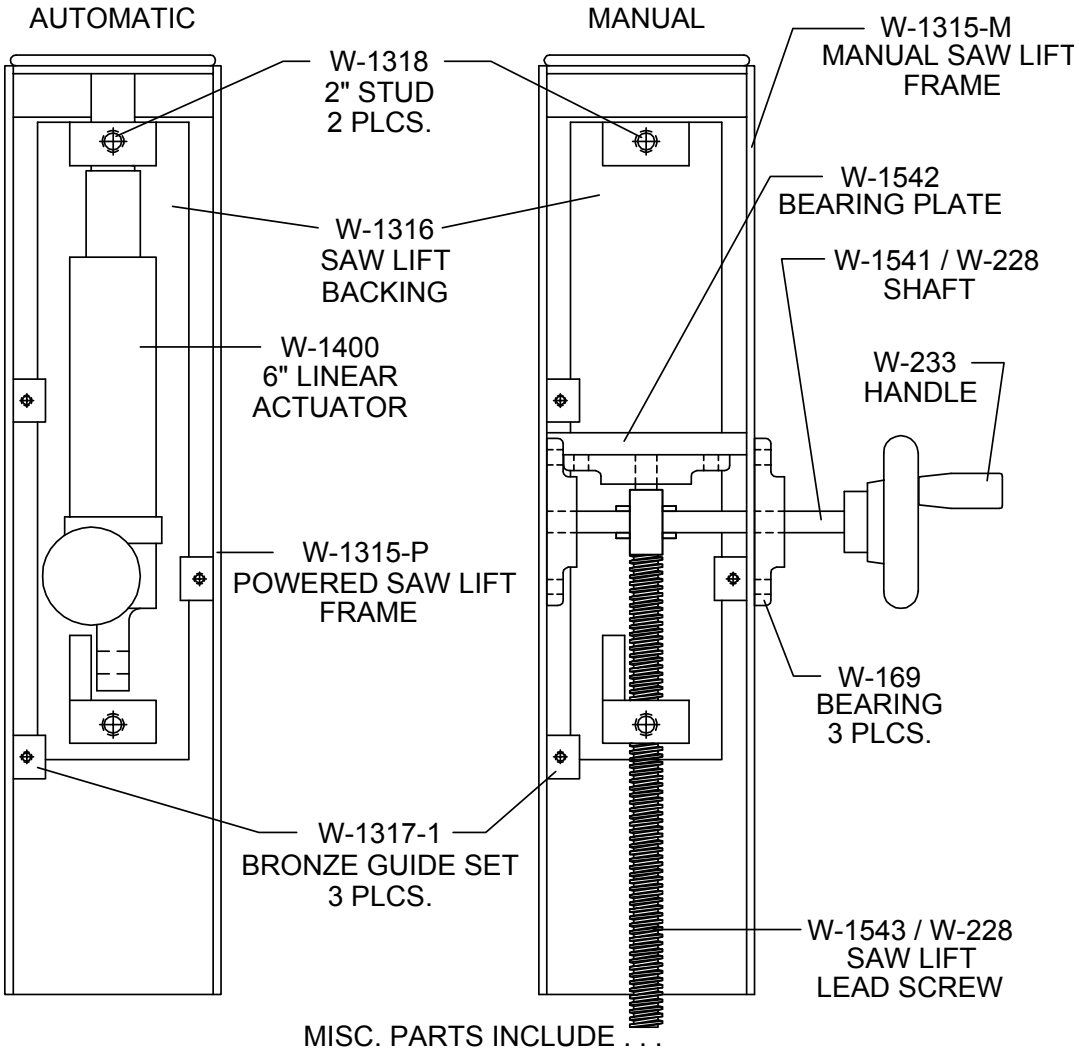
W-150 HD-B TOP & FACE SHARPENER

SAW LIFT

QTY	PART NUMBER	DESCRIPTION
1	W-178	SPRING
3	W-1317-1	BRONZE GUIDE BLOCK
3	F-106	ALLEN CAP SCREW
2	W-1318	2" STUD
1	W-1316	SAWLIFT BACKING
1	W-1400	6" LINEAR ACTUATOR (AUTOMATIC ONLY)
1	W-1315-P	SAWLIFT FRAME (AUTOMATIC ONLY)
1	W-1315-M	SAWLIFT FRAME (MANUAL ONLY)
1	W-1542	BEARING PLATE
1	W-1541	SHAFT (MANUAL ONLY)
1	W-233	HANDLE (MANUAL ONLY)
3	W-169	PILLOW BLOCK BEARING (MANUAL ONLY)
1	W-1543	SAWLIFT LEAD SCREW (MANUAL ONLY)
3	F-60	5/16 WASHER
1	F-388	5/16-18 SET SCREW
1	F-388-1	5/16-18 SET SCREW
2	F-15	5/16-18 NUT
1	F-101	1/4-20 SHCS

W-150 HD-B TOP & FACE SHARPENER

SAWLIFT ASSEMBLY
(BACK SIDE OF SAWLIFT)



MISC. PARTS INCLUDE . . .

QU.	PART #	DESCRIPTION	QU.	PART #	DESCRIPTION
1	F-12	1/4" JAM NUT	1	F-379	1/4-20 X 5/8 S. SCREW
2	F-18	5/16" JAM NUT	2	F-512	CABLE TIE
1	F-22	1/2" JAM NUT	6	F-517	BELLEVILLE WASHER
3	F-61	#12 WASHER	1	W-178	SPRING INDEX RETURN
1	F-112	5/16-18 X 1-1/4 SHCS	1	W-231	1/2" SET COLLAR
1	F-113	5/16-18 X 2 SHCS	1	W-284	THRUST WASHER
2	F-271	1/2-13 X 2-1/4 HHCS	1	W-1493	WAX GASKET
3	F-277	1/4-20 X 1-1/2 HHCS			

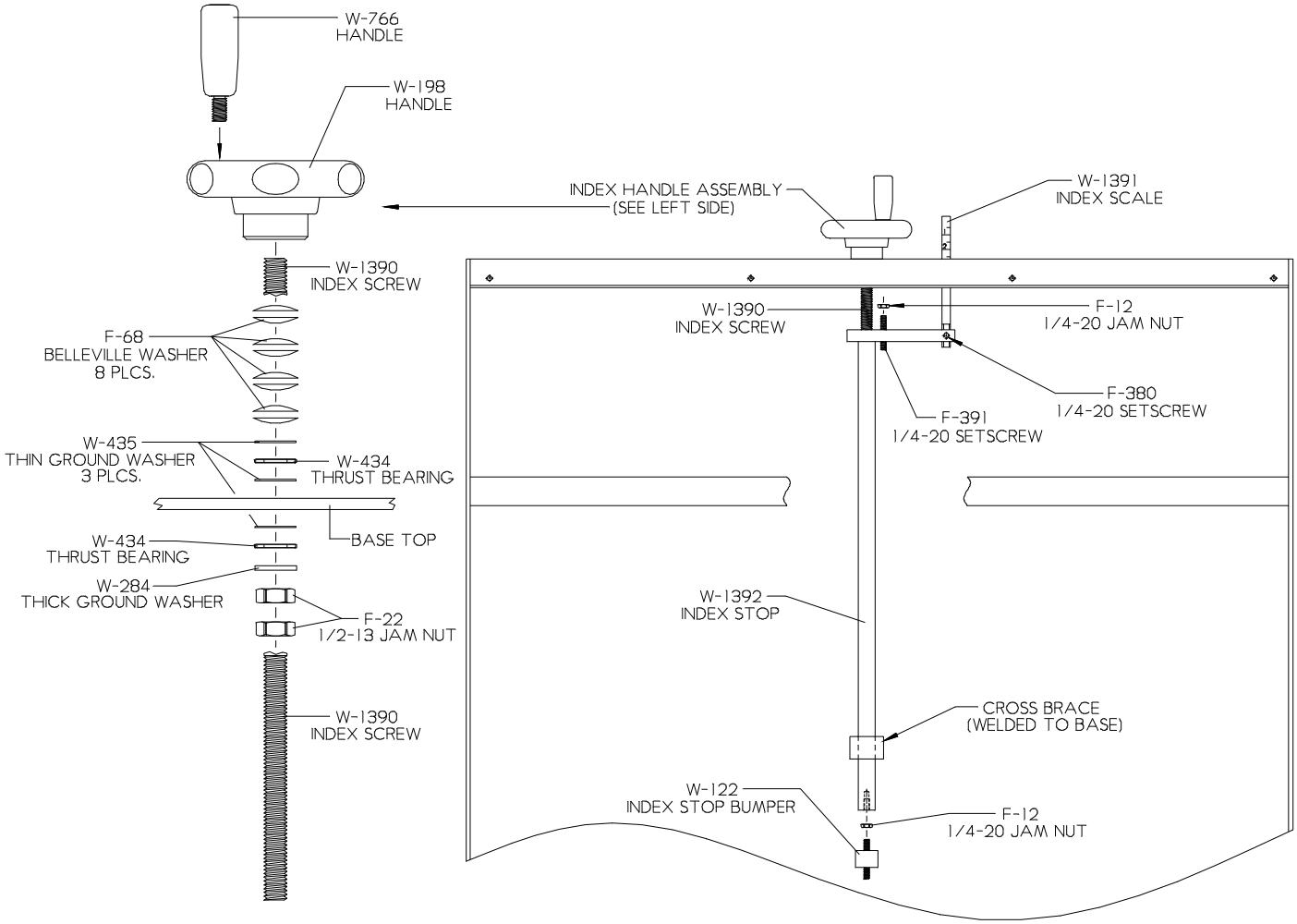
W-150 HD-B TOP & FACE SHARPENER

INDEX ADJUSTMENT ASSEMBLY INSIDE BASE

QTY	PART NUMBER	DESCRIPTION
2	W-198	MODIFIED HANDLE
1	W-1391	INDEX SCALE
1	W-1485	INDEX SCALE
1	W-1390	INDEX SCREW
3	F-12	1/4-20 JAM NUT
1	F-13	5/16-24 JAM NUT
1	F-391	1/4-20 SET SCREW
1	F-380	1/4-20 SET SCREW
1	F-379	1/4-20 SET SCREW
1	W-1392	INDEX STOP
1	W-1486	INDEX STOP BRACKET
1	W-2221	SHORT INDEX CYLINDER
2	F-638	BARBED FITTING
2	W-465	FLOW CONTROL
2	W-122	INDEX STOP BUMPER
1	F-432-1	CYLINDER MOUNT NUT
1	W-1487	CYLINDER ADAPTER
16	F-68	SPRING WASHER
4	F-22	NUT
4	W-434	THRUST BEARING
4	W-435	THIN WASHER
4	W-284	THICK WASHER

W-150 HD-B TOP & FACE SHARPENER

INDEX ADJUSTMENT ASSEMBLY INSIDE BASE



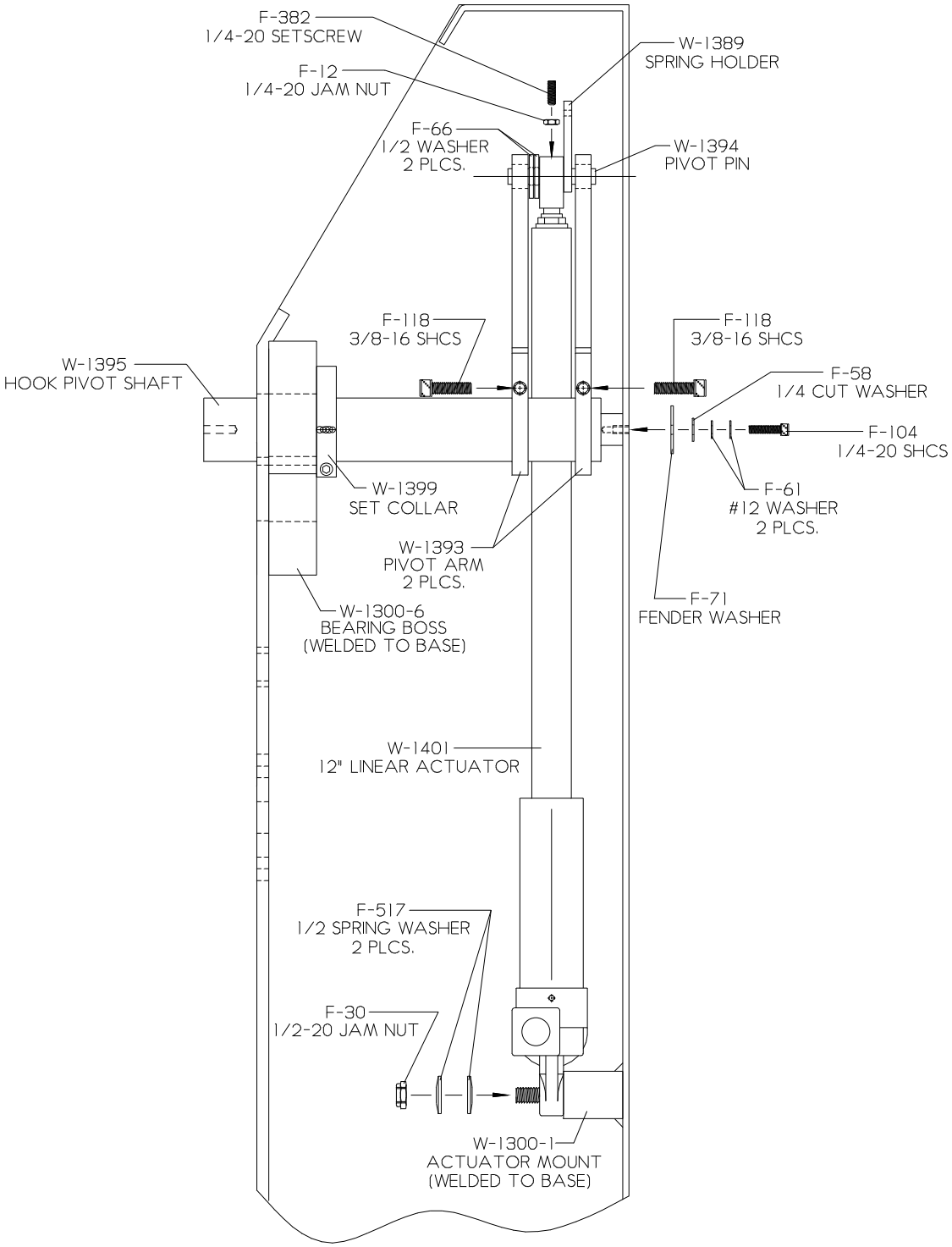
W-150 HD-B TOP & FACE SHARPENER

HOOK SHAFT ACTUATOR ASSEMBLY INSIDE BASE

QTY	PART NUMBER	DESCRIPTION
1	F-30	1/2-20 JAM NUT
2	F-66	1/2" WASHER
3	F-102	1/4-20 SHCS
2	F-118	3/8-16 CAP SCREW
2	F-517	1/2" SPRING WASHER
1	W-1389	SPRING HOLDER
1	W-1394	PIVOT PIN
1	W-1395	HOOK PIVOT SHAFT
1	W-1399	SET COLLAR
2	W-1393	PIVOT ARM
1	W-1401	12" LINEAR ACTUATOR

W-150 HD-B TOP & FACE SHARPENER

HOOK SHAFT ACTUATOR ASSEMBLY INSIDE BASE

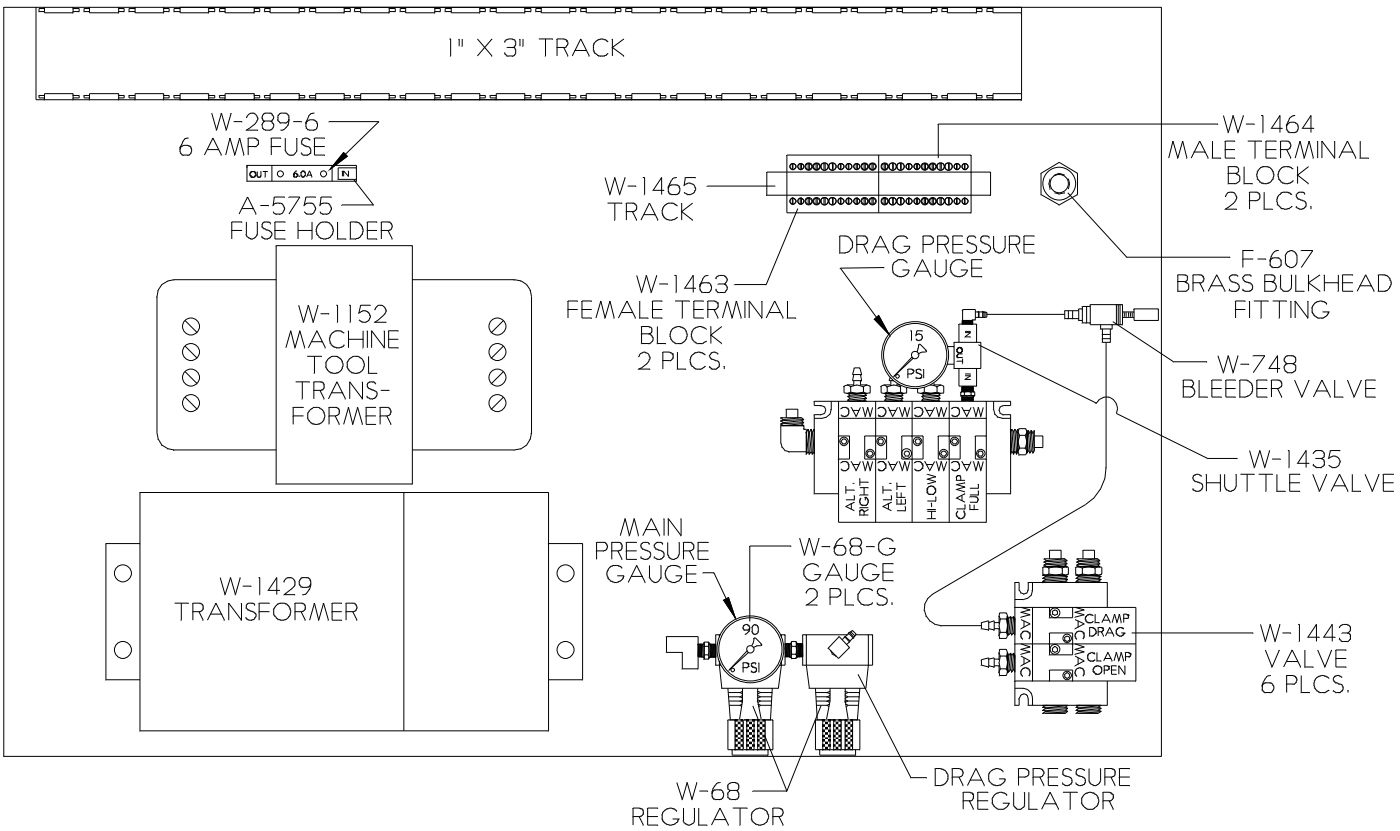


W-150 HD-B TOP & FACE SHARPENER

INSIDE REAR DOOR

QTY	PART NUMBER	DESCRIPTION
1	W-1429	TRANSFORMER (BUCK BOOST)
1	W-1152	TRANSFORMER (MACHINE TOOL)
1	W-289-6	6-1/4 AMP FUSE
2	W-68	REGULATOR
2	W-68-G	GAUGE
6	W-1443	VALVE
2	W-1463	FEMALE TERMINAL BLOCK
2	W-1464	MALE TERMINAL BLOCK

SUB PANEL ASSEMBLY (INSIDE REAR DOOR)



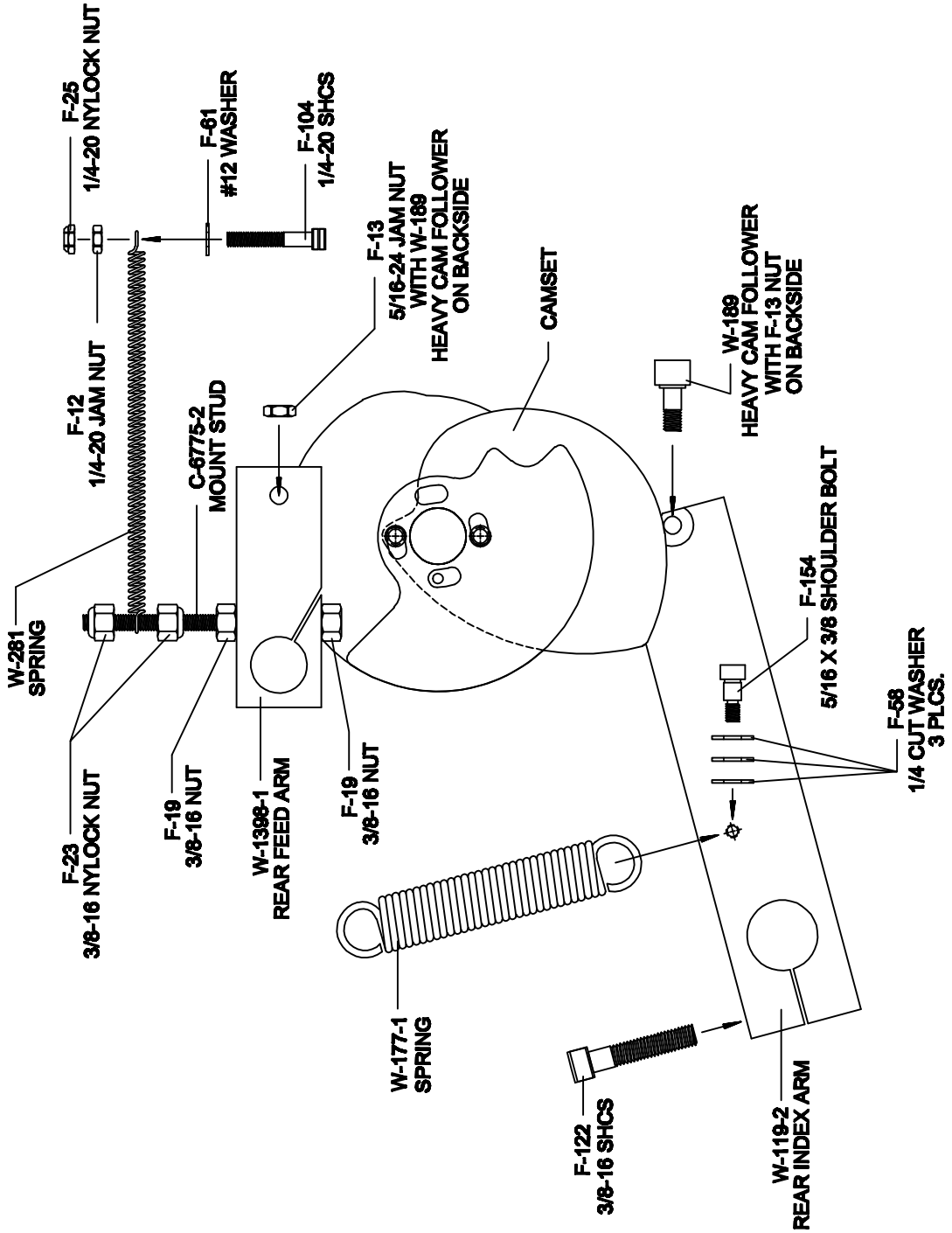
W-150 HD-B TOP & FACE SHARPENER

CAM AREA

QTY	PART NUMBER	DESCRIPTION
1	F-12	1/4-20 JAM NUT
2	F-13	5/16-24 JAM NUT
2	F-19	3/8-16 NUT
1	F-23	3/8-16 NYLOCK NUT
1	F-25	1/4-20 NYLOCK NUT
3	F-58	1/4 CUT WASHER
1	F-61	#12 WASHER
1	F-122	3/8-16 BOLT
1	F-104	1/4-20 BOLT
1	F-154	5/16 X 3/8 SHOULDER BOLT
2	F-278-1	CAM SET BOLTS
1	F-384	HUB SET SCREWS
1	W-119-2	REAR INDEX ARM
1	W-177-1	NEW STYLE INDEX RETURN SPRING
2	W-189	CAM FOLLOWER
1	W-220	CAM HUB
1	W-221	INDEX CAM
1	W-281	SPRING
1	W-1383	FEED CAM
1	W-1398-1	REAR FEED ARM
2	W-1404	PROXIMITY SENSOR
1	W-1437	PLUNGER FOR MICRO
1	W-1438	LIMIT SWITCH (MICRO)
1	W-1780-1B	TRIP CAM
1	C-6775-2	MOUNT STUD

W-150 HD-B TOP & FACE SHARPENER

CAM AREA



W-150 HD-B TOP & FACE SHARPENER

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